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The School Scene in Review

I. ON THE SCIENCE AND ART OF TEACHING AND ADMINISTRATION

There is a science and there is an art to most everything worth doing. This is a far cry from saying that everything one does is scientific or artistic. Science defines the properties, the principles, the laws governing certain materials and conditions to be encompassed by human processes. Art describes the aesthetic blending of these materials and conditions through human creativity. Human creativity is itself being increasingly subjected to scientific investigation and, therefore, to prediction. But men will always possess a streak of "orneriness," a quirk of insight, a unique way of perceiving and expressing relationships that will cause them to depart from their usual behavior patterns and hence to defy completely accurate predictions of their actions. Teaching the nation's children or administer-

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ing the nation's schools always will be, therefore, both a science and an art.

Impressed by his host's finesse in carving, the dinner guest might understandably exclaim: "I could never do that. Dissecting a succulent roast of beef is an art. One either has it, or he doesn't have it." Nothing could be further from the truth. The speaker is probably quite capable of learning the scientific aspects of carving: the properties of meat, skewer, and blade that must be taken into account. In time, he might well come to blend these properties with precision and to carve with a dexterity satisfying to even the most jaded kinesthetic and gastronomical tastes! Carving the dinner roast is a low-level practical art, admittedly, but one, nonetheless, demonstrating the need to learn some science as prerequisite to, or an accompaniment of, artistic development.

Overwhelmed by a profusion of scientific findings pertaining to teaching, the weary teacher is likely to say: "Spare me all this. Take me by the hand; show me what to do." Teachers by the tens of thousands flock to summer reading conferences and workshops hoping to be told something or shown something that can be translated immediately into the solution of some (preferably all) problems in the teaching of reading. A few teachers, more frustrated than when they came, go away saying: "Are there no 'knowns'? I'm just an ordinary mortal seeking practical solutions to everyday problems. Can not all our assembled brain power give me such solutions?"

The answers to such appropriate questions are not easily given. Neither are they consoling. There are, indeed, solutions to many of the practical problems of school-keeping, and these solutions often can be applied, mechanistically but productively, to the problems for which they are appropriate. The more routine the problem—the more closely allied to material than to human affairs—the greater likelihood of posing problems and solutions in some kind of one-to-one relationship. But so long as education continues to be concerned with seeking changes at the very core of human behavior (and how badly we shall have lost our way should the purpose ever be per-

ceived as any other!), the central tasks of teaching and of administering the educational enterprise will defy mechanistic treatment.

Specialists from many fields are, however, providing a body of scientific knowledge of such magnitude and rigor that teacher and administrator may, if they choose, become increasingly scientific in the decision-making process. The clause, "if they choose," is a key one here. The research worker, perhaps quite precise in predicting the choice a practitioner will make under a certain set of circumstances, must hold the hand, or usurp the role, of the practitioner if he is to alter the predicted course of events. The teaching or the administrative act predicted will have certain consequences that may or may not be "good" regardless of how accurately these consequences may have been heralded by one not involved in the action.

We must not be misled into thinking that, as the foundations of education become more scientific, teaching or administering will become less of an art. The contrary is more likely to be true. As each of the factors to be encompassed within the artist's creative drives becomes more rigorously defined, the possibility increases for his artistic products to become less primitive. By drawing upon man's increased understanding of man, the artist is able to depict in his work a wider range of human experience. By using the chemist's research into paint, he is able to predict more precisely the limits of his materials. By increasing his self-understanding, he is better able to judge the conditions under which he is likely to be most productive. Superlative art is disciplined creativity. In this sense, superlative teaching and administering are arts. As the disciplinary (scientific) components of these arts increase in their clarity and rigor, teaching and administering will not become less artistic; they simply will become less primitive.

Any comprehensive theory of education seeks to identify and to explain both the scientific dimensions and the artistic syntheses of these dimensions in the educative process. Now, the practitioner may say, defensively, that he is a practical school man and, as such, is not concerned with theory. But theory will seek him out, nonethe-

less, and regardless of his lack of concern for it, will catch him rudely by the heels. In any educational decision there are a number of determinants, whether or not recognized by the actor. These should be accounted for; in brief, they should be brought within the educator's "span of control." The "practical" school man deals with these determinants (or ignores them) on the basis of some theory; if he practices, as well as professes, lack of concern for theory, the theoretical formulations ultimately determining his decisions probably will be inadequate. Let us examine a few of the areas to be encompassed within the educator's span of control to see how they are becoming more scientifically defined and, hence, how our educating may become, *if we choose*, less primitive.

The moment a teacher and a group of pupils come together, a series of dynamic interpersonal relationships is initiated, regardless of what the teacher does or doesn't do. Looking only at the teacher as a component of the interaction, we see that the relationships are conditioned by the teacher's insight into, and control of, self; by certain implicit and explicit purposes guiding his behavior; by his knowledge of, and concern for, the human beings comprising the group; by his understanding and manipulations of the processes through which humans learn; by his grasp of certain bodies of content to be utilized in instruction; and by his use of time, space, and materials.

In this issue of the *School Review* there are articles touching upon each of the six factors identified above as belonging within the teacher's or the administrator's span of control. Several of these papers are utilized in the present discussion as we move forward with some elaboration of science and art in the first three of these six factors.

Eighteen years ago, when the writer began his teaching in a one-room, eight-grade rural school, he was armed with three formidable courses of studies: a pink one for the primary grades, a green one for intermediate levels, and a red one for the two junior high grades. So far as I knew, these three volumes defined my span of control.

They listed the objectives, the content, and the materials that I was to use. The "rest," whatever the term might include, did not much matter.

Several weeks later the "rest" very much mattered, and the three ponderous books mattered least of all. The impressive objectives in the courses of studies were too abstract to guide daily learning and teaching. The planned schedule of fifty-six periods per day (seven subjects for each of eight grades), as previously worked out in a normal-school course in class management, defied human energy. The lists of characteristics of school-age children, derived from a course in educational psychology, provided no clear guidelines for dealing with daily problems of living with thirty-four children. Admittedly, I had a less-than-adequate perception of my span of control. But had I possessed a more nearly adequate perception of those factors to be encompassed, my teaching practices still would have been seriously limited by the inadequacy of the scientific understandings then available to explain them.

At that time there was no clear-cut, functional differentiation between the role of educational objectives and the role of personal drives and goals in the educative process. We have been speaking and writing, particularly during the past two decades, of how important it is that pupils and teachers possess and understand common objectives. Recently several studies have sought to define educational objectives more rigorously. Useful as this approach is for many educational concerns—particularly for more precise evaluation of the educational enterprise—it is becoming increasingly apparent that what actually happens in schools and classrooms is more dependent upon another kind of goal dynamic. The teacher has drives as an individual and as a teacher (the latter arising, for example, out of the satisfaction-giving image one has of one's self as a teacher), and these drives are significant determinants of teaching style. Pupils likewise have drives for self-fulfilment. The school as a social institution provides, to use the concepts employed in later pages by Getzels and Guba, a "nomothetic," or institutional, dimen-

sion to goal-setting, often in contrast or opposition to the individualized, "idiographic" dimensions provided by teacher and pupils. We have, then, not merely the somewhat face-value problem of whether the teacher and the pupils see the school's objectives in common but also the deep, submerged-in-organic-tissue problem of whether the teacher's and the pupils' basic drives conflict with each other and with the demands of the school as a social institution.

Having no such insights to guide me eighteen years ago, I sought to become, during the first few weeks of school, increasingly effective in achieving the school's goals with, as I realize now, tremendous sacrifice of the idiographic dimensions and, hence, increasing inefficiency as a person. No doubt, the children, too, were becoming less efficient persons, however assiduously they may have applied themselves to certain educational objectives that we sought to hold in common. In time, with educational goals appearing less and less likely of attainment, regardless of the amount of energy expended by pupils and teacher, the realization that something was wrong began to enter my consciousness. At about that point, teacher and pupils together came to recognize an overwhelming problem and, probably for the first time, shared a truly common purpose within the deeper reaches of personality structure. With a sense of sharing and with institutional goals temporarily pushed aside, thirty-five energy systems began to pull together in creative ways toward the solution of their common problem. And, strangely, the educational objectives, which up until that time had been threatening, academic, and elusive, suddenly became in danger of some degree of attainment!

The teacher's sense of direction stems, then, from far more than a set of objectives carefully defined to show both the pupil behavior sought and the means through which that behavior may, hopefully, be realized. Daily, classroom goals are derived from a perception of teacher and pupil drive, blended creatively with the recognition (not necessarily verbalized) of what schools are for. The blend in action becomes increasingly artistic as educators come to see, appre-

ciate, and accept the deep-seated drives of those with whom they work.

Concern for people has long been accepted as a necessary component of the educator's span of control. This concern has prompted both longitudinal and cross-sectional studies of humans and various other attempts to classify and explain human behavior. A significant and suggestive body of scientific data is emerging. But long-established practices of administering schools, building curriculums, and instructing pupils have not yet capitulated to whatever such knowledge should suggest. Perhaps this stability merely attests to the appropriateness of old procedures, but in all probability the reasons lie elsewhere. Perhaps, for example, our categorizations so far used to explain human behavior do not lend themselves to productive action. To borrow an expression attributed to Harold Albery, we suffer from hardening of the categories. Our relatively large body of scientific knowledge, of some virtue in and of itself, does not suggest clear paths from educational science to pedagogical artistry.

Just as the search for clarity in educational objectives gives direction primarily to important, but rather mechanistic, processes of education, so the careful categorization of knowledge about learners so far has been most useful for certain manipulative tasks. By contrast, the relatively new (to education) attempt to understand personality dynamics in relation to processes of socialization offers promise of bringing art and science much closer together both in teaching and in administering. When the school principal, for example, comes to understand personality structure, it should become apparent to him that teachers' problems of morale and of parent relations cannot be dealt with adequately through a practice so lacking in subtlety as issuing pronouncements from the central office.

To assume that procedures for dealing with problems involving personality may be routinized or rationalized on the basis of a few clichés is to be egregiously naïve. As Moulton's article points out, not all teachers are agreed that "loving children" is the best way to in-

duce them to learn. Nor are they all agreed that "good public relations" with all school patrons must be maintained at any cost or that "to be liked by both peers and pupils" is a virtue transcending all others. And yet schools may come to operate in line with values such as these, simply because they are indorsed by a vocal, other-directed group to the extent that the inner-directed dissenter (more valuable than some teacher groups seem to believe) is driven to another school or to an entirely different vocation.

It takes only a little examination of the responses given to Moulton's questions to realize the inherent value of certain viewpoints held by persons who are not always the most agreeable personalities to have as colleagues. The principal, then, who encourages an environment within which the dissenter and his views gain acceptance in their own right may be on his way to developing the transactional leadership-followership style of administration indorsed by Getzels and Guba. On the other hand, the principal who encourages the beguilingly agreeable, but often cultist, environment sponsored by the extremely other-directed group fails to hammer out the kind of policy agreements necessary to effective and efficient administration. Like some members of his faculty, he comes to have no sense of direction other than a driving desire to please everyone. And, since pleasing everyone is impossible, his administrative activity becomes inefficient to the point of personal collapse. An inadequate span of control, together with inadequate scientific insight into whatever the principal does include in his span of control, becomes responsible for failure in the practical affairs of school men.

Our search for clearer guideposts to creative teaching and administering has taken us also along a trail being blazed by students of the psychology of learning. The possibility of discovering how the human organism learns has long held a chimeric fascination, and, mesmerized by it, we have often stumbled along heedless of the fact that the trail blazes were very faint or that we had lost sight of them entirely. Thus, when I began my teaching, I thought (and Haggard points out the fallacies in so thinking) that adequacy of learning is

the product of general ability, as demonstrated by intelligence quotient, and motivation for the tasks to be accomplished. By various subtleties the teacher stimulates the desired motivation. I went still further: I equated motivation with time and drill. And so, several spring afternoons each week, when the days were lengthening and young adolescents' thoughts were wandering even more than usual, about a dozen weary youngsters and an even wearier young teacher gave extra time to the intricacies of common fractions. So far as I know, our labors came to naught (measured, that is, by the objectives I had in mind). We drilled on three types of percentage manipulations, and, when I posed a problem, the youngsters invariably asked, "Which type do I use?" My science was inadequate, and art deteriorated to the level of Tom Sawyer's fence-painting.

As Haggard observes, educators have held, and to a considerable extent still hold, the view that human learning can be explained by, and therefore induced through, application of a few "laws of learning." Studies using many different approaches are suggesting otherwise. A substantial body of evidence indicates that the values held by teen-agers contrast markedly with the values of their adult teachers. The poor marks often received by good students may well be, at least partly, the result of divergence between their values and the values held by their teachers, just as the good marks of some mediocre students may be, in part, the result of high agreement in value patterns of these pupils and their teachers. It is not surprising to find, then, that whether or not some children are promoted in school depends as much or more upon where they happen to attend and who happens to teach them as it does upon how much general ability they possess (up to a certain point at least) and how hard they work. Certain virtues that were part of daily literary consumption when I was a boy ("Try, try, try again." "Just put your mind to it." "Work harder, and it will come to you.") certainly become anachronistic in the face of such evidence.

Haggard and Ford point out the tremendous influence of socialization factors on academic achievement. Ford suggests that both

age-sex roles and parents' aspirations for, and relationships with, their children are intimately related to the school work of junior high school children. Haggard's studies carry us into the questions: (a) What is the effect of the socialization process on general achievement? (b) What is the relation between certain personality characteristics and proficiency in differing intellectual tasks? In passing, then, it must be noted that high-school students, however interested in ideas, differ in regard to the ideas for which they have a taste. Consequently the group directing the University of Illinois Project for the Improvement of School Mathematics must recognize that personality characteristics of their students, quite apart from general intellectual ability, will be a significant determinant of how these young people respond to the motivation provided. Haggard's comment is relevant here: "With respect to such questions as the prediction of achievement and the selection of persons for training in particular fields, it seems clear that the non-intellectual personality factors, as well as their intellectual correlates, must be considered in order to distinguish between those who can, and those who do, achieve in particular areas of endeavor." The University of Illinois group has before it, then, the fascinating prospect of conducting research into the relation between personality type and degree of academic profit from this new program. Such research would enhance both our scientific understanding of conditions conducive to learning and our insight into the pedagogical arts appropriate to these conditions. Perhaps the researchers would conclude, with Haggard: "The art that parents and teachers need to perfect involves the applying of socialization pressures compatible with the child's current perception of his world and of himself in relation to it, and with his emotional and intellectual capabilities at the time."

By now, perhaps, the reader who joined us some pages back with the dinner guest is ready to leave us (or has already departed). Stay a little—for breakfast, if you will. Dealing intelligently with any endeavor is first a matter of reducing it to the barest essentials, of finding out what the basic ingredients are that must be put together.

The architect and the builder may come up with a variety of houses resembling one another only in that they are all houses. They may use brick instead of stone, plastic instead of metal, wood instead of plaster, but there still will be roof, walls, and doors. The essentials remain; science defines the properties of the essentials and prescribes their limitations. Matters of art determine the blending of these essentials through human creativity.

Admittedly, teaching and administering are more complex arts and sciences. But there are certain essentials, and these are as appropriate to the educator's span of control today as they were when you or I started teaching. Our insight into each of these has changed (and, I hope, advanced), as it should. Then, purposes were seen as something written in a syllabus. Now, they are seen as expressions of inner drives within various interacting persons, compatible or incompatible with one another and with the purposes of the social institution. Then, our understanding of learners embraced facts and generalizations describing the various stages through which humans pass in flitting from cradle to grave. Now, we seek to view the learner as a unique self, mirrored so as to reflect both the mosaic of his culture and the kaleidoscope of his own self-perceptions. Then, our pedagogical grasp of learning theory was limited to a few mechanistic laws of learning. Now, any comprehensive theory of learning, in seeking to explain and predict conditions appropriate to various kinds of academic accomplishment, must examine socialization processes along with general intellectual ability. Nonetheless, insight into purpose, learner, and learning were, and are, essential components of the educator's span of control.

The six factors defined earlier (perhaps you would want to add others) constitute scientific considerations that affect our teaching and administering. How we synthesize them in conducting school affairs constitutes the art of teaching or administering. The drive to create—with us eighteen years and eighteen hundred years ago and to be with us into the unpredictable future—lies at the very heart of any synthesis. And this drive to create is part of the human inherit-

ance of those who seek to educate. When, in understandable frailty, we say: "Spare me all this. Take me by the hand; show me what to do," we ask to be relieved of the drive to create. Relieved of the drive to create, we are likewise relieved of the will to live.

II. HERE AND THERE IN EDUCATION

The international scene

The tendency to become enamored of educational machinery at the expense of the enterprise for which it is devised appears to be an international problem. In the United States we are more inclined to tinker with administrative and organizational gadgets than to examine the educative process itself. For example, we seek to adjust children's progress to a lock-step, graded system, only occasionally questioning the graded structure itself.

Now, from England comes the observation that national examination systems in Europe impose a more or less uniform failure rate in such a way that nearly half of the children in primary and secondary schools do not progress "normally" through their studies. In "Unesco Features" (A.S. 41), W. D. Wall (National Foundation for Educational Research, Great Britain) states: "It looks very much as if the examination and the program together had been devised with more respect to what adults think children should know than to what research has taught us about the capacities of children, their rhythms of development, and the psychology of learning." European concern for problems such as these and, in particular, dissatisfaction with the examination part of the educational enterprise motivated a conference of representative educators, research workers, and psychologists from twelve countries, who met in Hamburg in March, 1957, to study a series of reports from all over the world on the functioning of national systems of examinations.

Simultaneously, in Asia, the editor of *Teacher Education*, the journal of the All India Council for Secondary Education, wrote as follows regarding the restrictive influence of external examinations as used in India: "Today the feeling that these examinations are just

a matter of luck or chance has created such a deep sense of frustration that both teachers and students have become indifferent to the learning process." In view of the many deficiencies in the external examining system, the temptation to throw it out completely has a certain appeal. But this would not be getting at the central problem. To abolish the system would be to lose much of the opportunity to study the very foundation structure of education—and, of course, to abolish the external examination now might well prove to be throwing out concern for any kind of evaluation. Benjamin S. Bloom, of the University of Chicago, serving as adviser to the government of India on examination problems during the spring of 1957, quickly became aware of both the danger and the opportunity. Any revision of the present system, he said, should be conducted as part of an over-all appraisal that would define educational objectives more explicitly, select and organize educational experiences so as to bring about in students the kinds of growth specified by the objectives, and broaden the base of evaluation as a whole.

The ability continuum

Now that a great many adults have made themselves heard regarding education of the gifted, it is refreshing to hear what adolescents think. Richard F. Bruns and Alexander Frazier, of the Houston (Texas) public schools, surveyed rapid learners in eight English sections to get their reactions to these special classes. The report of the study is presented in "What Rapid Readers Think of Special Classes" (Curriculum Bulletin 56CBM74, Houston Independent School District). One rather clear expression emerging from the survey was the students' feeling that they were expected to do a better quality of work and to be more original and creative than other students. However, they showed little recognition of any specific differences in teaching methods used, and many reported no greater use of library or community resources in these special sections.

To explore problems at the other end of the ability continuum, the Chicago public schools have entered into a project supported in

large part by a \$600,000 research allocation from the United States Office of Education. Frances A. Mullen, assistant superintendent of the Chicago schools in charge of special education, in an announcement of the project appearing in the May-June, 1957, issue of the *Chicago Schools Journal*, writes that these hypotheses are giving direction to the studies:

1. A comprehensive program for the development and improvement of reading skills of mentally handicapped pupils—a program including wide use of free reading along the lines of pupil interest—is both feasible and advantageous.

2. Strong emphasis on phonics accelerates the learning of reading by mentally handicapped pupils.

3. The unit method, cutting across subject-matter lines and centering on topics of pupil interest, is more effective than a method which compartmentalizes the classroom program into specific and relatively regular periods dealing with separate school subjects.

We have much yet to do in defining the central core that must be common, to at least some degree, in the education of all young learners. For they are all to become, we pray, law-abiding, self-respecting citizens, and, in the hope of their becoming so, we have passed laws to keep them in school for ten to twelve years of their young lives. Agreeing on both the central purposes of education and the priorities among them, as suggested by Paul Woodring in *A Fourth of a Nation* (McGraw-Hill Book Co., Inc., 1957), will help. But educational objectives do not prescribe either a sequential scheme of learning experiences or the instructional procedures most conducive to desired learnings among children and youth who differ in much more than sheer intellectual readiness to learn. Once agreed, say, that certain central concepts in the realm of civics should be explored by all high-school students, we must then determine the degree of differentiated instruction necessary if understanding of these concepts is to be experienced by all students. Would we conclude, for example, that participation in Government Day, as conducted by the Seniors of Mount Pleasant (Michigan) High School, would provide all students, regardless of their ability, with appropriate opportunity

to deepen insight into the affairs of government? On the assumption that all these Seniors shortly will be voting citizens, they are given the opportunity to participate in the operations of city, county, and state government. Certainly much of our confusion in planning education for learners who differ grows out of our failure to keep the what and the how properly differentiated and appropriately related.

Education and the electronic age

The what and the how issues carry over into any consideration of education by television. The Texas project to recruit and educate teachers by television (conducted by the Texas Education Agency with financial support from the Fund for the Advancement of Education) is now in its second year. Analysis of the scripts prepared thus far suggests an observation about education in general: conditions surrounding the learning-teaching act as frequently conducted are often more conducive to teacher learning than to pupil learning. In seeking, for example, to translate the content of certain courses for prospective teachers into television programs, it becomes glaringly apparent that much such content should not be "taught" at all. Instead, the teacher-to-be should be guided in some direct experience that encourages practice of the skills to be learned. Producers of educational television programs for teachers can help rethink the content of courses for teachers by critically observing what can be taught by talking about it, what calls for a demonstration, and what can be learned only by direct involvement of the prospective teacher in a learning-teaching situation.

In *Schools for Tomorrow* (published recently by the Fund for the Advancement of Education), Alexander J. Stoddard reported on his visits to seventy-two communities in all sections of the country. Whatever reservations one may have about television as an educational tool, it is apparent from this report that school buildings now in construction that do not make some provision for television usage will be archaic before their completion. However, young persons

contemplating careers in teaching should not fear their potential replacement by television. The experience of educators who have already used closed-circuit television indicates an effective viewing span of only thirty minutes for high-school students; the non-electronic variety of teacher will be needed for the rest of the school day. Nonetheless, the fresh look at teaching now being stimulated by television may well reopen some educational issues that closed long before they were adequately examined.

Education beyond the high school

By now the report of the President's Committee on Education beyond the High School has been widely disseminated. We would be remiss, however, were we not to summarize certain of its contributions. One of these is the identification of three major educational complexes other than colleges and universities that concern themselves with schooling after high school: (a) the educational programs conducted by the military (financed fully by the federal government), reaching perhaps one million persons, or one-third the present college enrolment; (b) education conducted by private business establishments for their employees, current participation matching the enrolment of all colleges and universities; and (c) the great variety of continuing-education programs embraced by the term "adult education."

To cope with a college and university enrolment that is to double to six millions by 1970, the report recommends: (a) that there be no large-scale federal scholarship plan; (b) that students be encouraged to "borrow for an education" instead of expecting free scholarships and that campus work opportunities be markedly increased to provide for the eager; (c) that the highest priority be given to raising faculty salaries; (d) that faculties of colleges and graduate schools join with others in recruiting graduates and undergraduates of high talent for college teaching; and (e) that the United States Office of Education retool to provide a steady stream of current information about conditions and trends in higher education.

Year-round use of educational facilities

In June the states' chief executives debated the twelve-month school year at their 1957 Governors Conference in Williamsburg, Virginia. Three proposals came in for attention: add a summer school with attendance optional; conduct school on a year-round basis, each pupil attending three of the four quarters according to a staggered plan; and require all pupils to attend all year, with a short vacation occurring at some point.

Among the disadvantages of the extended school year, as laid forth in a paper prepared by the Connecticut State Department of Education, is the resulting disruption of interscholastic athletics! (Exclamation mark ours.)

H. R. Vanderslice, reporting in *U.S. News and World Report* for August 2, 1957, reminds us of the all-year school plan he directed for ten years (1927-37) as superintendent of schools in Aliquippa, Pennsylvania. The student body was divided into four groups; the school year into four quarters of twelve weeks each. During each quarter, three groups attended school; the fourth was on vacation. Many of the fears expressed by critics of such plans did not materialize. Attendance at school and pupil achievement in the summer quarter always surpassed results in the winter quarter. In addition, according to Mr. Vanderslice, the four-quarter plan provides greater flexibility in grouping and thus assists in breaking the lock step characteristic of annual promotion policies. The chief advantage, he points out, is that sixty rooms operated on an all-year basis do the work of eighty rooms in the conventional nine-month plan.

Socialization, Personality, and Academic Achievement in Gifted Children

Children grow up, as everyone knows, to become members of their society, and in the process they develop most of the skills and values prized by adults. Since this "socialization process" is going on around us all the time, it is generally taken as a matter of course. We adults constantly exert pressures which mold the behavior and attitudes of our children. Presumably, the more we understand human behavior, the better able we shall be to teach our children the many diverse skills necessary to become effective adults in our society.

The attempt to increase our understanding of human behavior is hindered by subtle restrictions which we can never entirely escape. These restrictions include our inability to comprehend the full complexity of human behavior. Of more importance, perhaps, is the fact that, as we become socialized, we develop rather stable pictures of ourselves and of our world. We are used to our world as we have come to see it, and we resist seeing it differently; our cultural and intellectual heritage not only enables us to view our world with meaning but also tends to restrict our view of it. For example, in educational circles the view has been held that human learning can

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be explained by a few "laws of learning," such as the laws of effect, recency, and frequency. And since children learn in school, some persons recommend that we teach in terms of these "laws."

The writer of this report believes that the so-called classical laws of learning—or, more generally, stimulus-response theories of psychology—do not offer an adequate explanation of human learning (14). Furthermore, there is strong reason to believe that educational practices based on a stimulus-response theory will not be adequate to meet present-day demands for educating our youth and will be practically useless (if not a hindrance) in helping to develop the intellectual resources found in our gifted children.

Up to the present, no general theory of behavior and learning has been worked out well enough to justify its systematic application in educational practice. Rather, we have a variety of promising insights that have been proposed by workers in such fields as cultural anthropology, sociology, psychoanalysis, and Gestalt and clinical psychology. When brought together, these insights seem to offer fruitful leads to a better understanding of human learning or, broadly speaking, of the socialization process. One of the purposes of the research project to be described below (1) has been to use some of these leads in a setting concerned with the education of gifted children. In so doing, we hoped to learn more about the conditions related to the ways in which children come to utilize their energies and abilities in achieving various intellectual and interpersonal skills during preadolescence and adolescence.

In this research an attempt was made to study academic learning, to be sure, but we tried, at the same time, to consider such learning in relation to the totality of the individual's personality and experience. To do this required study of such factors as patterns of socialization pressures; the developing personality structures of the children doing the learning, as well as their patterns of academic achievement; and any possible interrelationships among these factors. Considering all these factors together, we hoped to gain a clearer picture of the place and meaning that academic learning has

in the lives of gifted children. It might be well, therefore, to present briefly some of our major working assumptions regarding the child's behavior, the socio-cultural context in which it occurs, and the meaning of academic achievement in this context.

First, we assume that all behavior is motivated, that behavior is a function of how the individual sees his world at the time and of how he can satisfy his needs and realize his goals within the limits of what is possible for him. From this point of view, the individual's behavior is adaptive for him at the moment. Over time, such behavior patterns will become stabilized and tend to regulate his subsequent perceptions, motivations, and behaviors.

We also assume that all behavior occurs in some physical-social-cultural context, which also tends to regulate the individual's behavior, and that his behavior must be appraised in terms of this context. The most important aspect of this context includes the persons who exert pressures and constraints on the child, who encourage or require him to learn to do tasks upon which they place value. The extent to which the individual has acquired the valued skills and attitudes of his group will indicate the extent to which he has become a socialized member of the group. Incidentally, socialization always places more or less stress on the person being socialized, since it necessarily requires his doing some things he may not want to do, and not doing other things that he may want to do. This is the price that must be paid in order to develop stable, "socially acceptable" patterns of behavior.

A high level of proficiency in linguistics, arithmetic, and other academic skills is a greatly prized value of the parents and teachers of the children whom we studied (almost all the children are from upper-middle-class professional families, and most of them are children of university faculty members). Under such conditions we assume that, if the socialization process proceeds smoothly, the children will learn to channel much of their energy toward high academic achievement—much more than would children from a cultural group not holding these values or not holding them so strongly.

Academic achievement, then, is seen as one of many expressions

of the extent to which the children studied are responsive to socialization pressures and are in the process of acquiring the skills, attitudes, and so on which are prized in their socio-cultural group. It is true, of course, that differences in such factors as innate potentials (for example, ability, temperament, energy level) or differences in the degrees and patterns of socialization pressures and experiences will always exist and will complicate the picture of how any given child uses his energies to achieve academically. Because of such differences, the children will differ; in more technical language, they will develop different personality structures.

If personality structure is largely a function of the socialization process, it follows that academic achievement is also related to personality structure. More specifically, we assume that the general level of academic achievement will be related to the degree of pressure put on these children to develop academic skills and also that certain personality factors will accompany the general level of academic achievement. We also assume that, other things being equal, relatively low academic achievement will occur when the child has run into difficulties with respect to the socialization process. Finally, if such factors as innate ability are held constant, we assume that children showing different patterns of academic achievement will likewise tend to have different personality structures.

On the basis of such assumptions a seven-year project of research on socialization, personality, and mental processes was begun in the Laboratory School of the University of Chicago. We studied an entire class of seventy-six children in Grade III, and the interrelationships among a variety of variables were traced until the children had finished Grade IX. Our purpose in this article is to indicate the general nature of our procedures and findings, particularly as they apply to questions of educational theory and practice. A full technical report of this research is being prepared for publication.

Data were collected each year on the children in this study, but, since this report will deal primarily with interrelationships among the personality (or non-intellectual) and academic-achievement

variables during preadolescence, only the findings based on materials collected from Grade III to Grade VII, inclusive, will be reported here (2). During this period forty-five of the children were in attendance during each of the five years, and these children make up our research sample.

We collected the following information on each child throughout the preadolescent period: (a) measures of parental pressures on the child to achieve academically; (b) "projective" personality tests; (c) behavioral observations in classrooms, on the playground, and at school social activities; (d) mental-ability tests; (e) academic-achievement tests (in reading, arithmetic, and spelling from Grade III on; also in language skills, such as punctuation and grammar, from Grade IV on); and (f) teachers' ratings and reports of classroom behavior and performance. (A more detailed description of these materials and of our methods of collecting them will be found in the Appendix to this article.)

Since almost all of the children in this study are from homes with strong intellectual orientation, it is to be expected that they will be above average in intelligence and academic achievement. This expectation is borne out by the fact that, on the several measures of both intellectual ability and achievement, the performance of the average child in this group almost always fell between the ninetieth and the ninety-fifth percentiles on national norms. That is to say, on tests of intelligence and academic achievement, the "average" child in this group performed better than 90-95 per cent of all the children of the same age in the country. Clearly, this research was carried out on an atypical sample, and consequently we cannot assume that our findings will apply equally well to children in general.

Although our findings may not be applicable to all children, they should apply to children of comparable ability and achievement and from similar home backgrounds, especially if our assumption is correct that academic achievement is one of the by-products of the socialization process. Actually, this particular group of children was chosen for study largely because they are a representative sample of the nation's gifted children and because there is a growing need to

learn more about such children in order to identify and develop the intellectual resources of our society.

This research was initiated because of our interest in how children learn to channel their energies and, in the process, develop various abilities and skills as they become socialized members of their cultural group. A study of how children develop high-level proficiency in linguistic and arithmetic skills seemed to be a good starting point in seeking answers to this more general question. By and large, the findings reported below are statistically significant, and the various characteristics and relationships either were stable throughout the five-year period which we studied or tended to shift systematically during this period.

In the presentation of our findings, comparative statements will be used to indicate the variable, factor, or trait that was found to characterize each of the achievement groups. That is to say, if the high general achievers usually show some personality trait which is not found among the low achievers or the opposite of which is shown by low achievers, such a trait will be used to describe the high academic achievers. Thus these results do not describe any particular child so much as they indicate the traits which tend to be found in the children in the various achievement groups. It should also be kept in mind that the personality variables frequently refer to the children's underlying attitudes and feelings, which may or may not be expressed openly in their everyday behavior.

By the time they arrived in Grade III, the *high general achievers* (pupils who performed at a high level on all the tests) were sensitive and responsive to socialization pressures, had largely accepted adult values, and were striving to live up to adult expectations. They saw their parents as being somewhat overprotective, pressuring for achievement, and lacking in emotional warmth (frequently they were correct). Insofar as they accepted many of the adult values as their own, their conformity in this respect seems to have given them a high degree of security and confidence in their relations with adults, even though they expressed some underlying

resentment toward authority figures. In general, however, they showed a high degree of inner harmony, being rather adept at emotional control and at organizing and integrating their experiences, ideas, and feelings. In their behavior with others, they were somewhat more tense, competitive, and aggressive; had developed good work habits and were persistent in them; got along better with their parents, teachers, and peers; and showed a higher level of overall adjustment than did the low academic achievers. (Incidentally, the designation "low achievers" must be taken in a relative sense, as the low achievers in this group would be "superior" achievers in most classrooms.)

By Grade VII, various changes had taken place in the children who remained high academic achievers. Although they continued to respond to the socialization pressures of adults and to strive toward adult standards of behavior, they had developed strong antagonistic attitudes toward adults and often pictured adults as being inadequate and ineffective. Such attitudes were not expressed by the low achievers. Thus, although the high achievers had accepted adult norms and expectations and had shown increased surface conformity, they increasingly rejected adults as persons. At the same time, they showed a marked increase in the level of their anxiety and a corresponding decrease in their intellectual originality and creativity. Although there was no such difference in anxiety and creativity between high and low achievers in Grade III, a marked difference existed between these groups by Grade VII. The high achievers were able, however, to control and channel their anxiety in various ways, for example, through the intellectualization of their experiences or the mastering of new knowledges and intellectual skills. They also became more aggressive, persistent, hard driving, and competitive, and they showed signs of willingness to be aggressive and destructive in order to defeat and win over other persons. But, withal, they retained a high degree of mental flexibility and spontaneity, particularly in their ability to manipulate abstract symbol systems.

Interestingly enough, by the time they reached Grade VII, the high achievers began to emerge as the social leaders of their peers; they served on the important class committees and held the important class offices, and so on. Actually, they were respected more than liked by their peers. The fact that the high academic achievers became the social leaders also suggests an important characteristic of the school's atmosphere, since in most classrooms these children would probably be snubbed as "grinds" and "bookworms." In this school setting, however, where all the children are concerned about doing well academically, many of them come to idealize intellectual prowess and consider it an essential ingredient to justify self-esteem and acceptance.

After differences in average level of performance on all the tests were taken into account, differences still existed among the children with respect to their performance on each of the individual tests. The measures of linguistic performance were obtained from the tests in reading, spelling, and language (punctuation, capitalization, and so on). These tests measure a variety of rather different linguistic skills, with proficiency in reading (speed and comprehension) set off from the more mechanical tasks required in the spelling and language tests. In fact, we found that, if a child earned a high score on the reading test, he tended to earn a low score on the spelling and language tests, and vice versa. This being the case, children whose performance on the reading test was high in comparison with their performance on the spelling and language tests, and children who showed the opposite pattern, were compared with respect to personality and other non-intellectual measures. The children showing these two linguistic patterns will be described separately.

The high achievers in reading seemed to have withdrawn into themselves and to view their world and the people in it from a distance. The reactions to their parents and other authority figures were mildly negative—a fact which may have reflected their desire for isolation from external pressures and controls or their wish not to

become involved with others but rather to live within themselves. These children had the ability and the propensity to use external realities as a stimulus for their own imaginings and in this way to become expansive and free—and to leave convention behind in doing so.

These children were intent on maintaining their sense of integrity, as they defined it, in terms of freedom in their impulse life, creativity, and independence of thought and action. They responded in this manner without excessive guilt or concern about other people's expectations and opinions. Although generally sensitive to others, if they felt rejected, they tended to become hostile or to withdraw rather than try to conform to the ways of others. If they were hurt, they tended to retreat and to draw upon their own inner resources. These children had difficulty in expressing either affection or hostility openly, had difficulty in relating to others, and lacked the facilities for developing and maintaining such relationships.

The high achievers in spelling and language tended to view parental and other authority figures as omnipotent, rejecting, and generally punitive and not as a source of emotional support. Although these children were dependent upon their parents, they seemed unable to show real affection or to establish warm emotional relationships with them. Rather, they seemed to act on the belief that, by adhering strictly to parental rules, they could gain their parents' acceptance or, at least, could avoid being rejected.

These children were markedly passive and dependent upon outside sources for direction of their thoughts and actions. For example, when they were asked to work out new solutions in unfamiliar situations, they seemed unable to deal flexibly with the problems or to appraise them in other than a literal, rule-bound, mechanical fashion. They also showed a bland emotional life, appeared to be incapable of giving or receiving affection, and were equally inhibited in expressing hostility. They seemed to lack inner emotional resources, to have a relatively barren fantasy life, and to lack independence of judgment and the ability to act in terms of it. Although these children were, in a sense, oriented toward people, they lacked deep

affectional relationships and relied on conformance and social techniques to gain apparent acceptance.

The high achievers in arithmetic, those who did better on the arithmetic test than would be expected in terms of their over-all level of achievement, tended to see their environment as being neither threatening nor overwhelming. Rather, they viewed it with curiosity and felt capable of mastering any problems they might encounter. In viewing their parents and other authority figures, and in their relations with them, they showed less strain than the high general achievers and the high achievers in reading, and greater independence than the high spelling achievers. Furthermore, the arithmetic achievers had by far the best-developed and the healthiest egos, both in relation to their own emotions and mental processes and in their greater maturity in dealing with the outside world of people and things.

The high arithmetic achievers could express their feelings freely and without anxiety or guilt; were emotionally controlled and flexible; and were capable of integrating their emotions, thoughts, and actions. Similarly, their intellectual processes tended to be spontaneous, flexible, assertive, and creative. Of the subgroups studied, the arithmetic achievers showed the most independence of thought, were best at maintaining contact with reality and at avoiding being bound by its constraints, and could function most effectively in the realm of abstract symbols.

In their relations with authority figures and peers, they were more assertive, independent, and self-confident than were the children in the other subgroups. Generally speaking, they related well to others, but, if they felt that attempts were being made to impose undue restrictions upon them, they tended to respond with hostility and self-assertion in order to maintain their independence and autonomy of thought and action.

Although there was no difference in the over-all achievement of boys and girls, about three-fourths of the boys performed relatively better on the reading tests and about three-fourths of the girls per-

formed relatively better on the spelling and language tests. This sex difference in pattern of linguistic achievement seemed not to be an artifact of this particular sample of children, since the same pattern emerged with a different group of preadolescents who were tested over the same five-year period (5).

Just why this difference should exist is not clear. But if we look at the intellectual skills required to perform at a high level on the two sets of tests, it would appear that the boys had developed greater proficiency in abstract reasoning, that is, in working flexibly with linguistic symbol systems and with their tangible or specific referents. Correspondingly, the girls seemed to have developed greater skills in the more tangible, rule-bound skills associated with the spelling and language tests and in relating directly to specific events.

Allowing for the existence of possible genetic differences in temperament and their influence, if any, on typical modes of approach in dealing with, and relating to, reality, the differences may also be due to the fact that boys and girls tend to be subjected to somewhat different social pressures and expectations. In general, preadolescent girls are permitted somewhat less autonomy, and are required to conform more strictly to social expectations, than are boys in our society (17). Regardless of any presumed causal factors, this research also indicates that similar sex differences existed in the facility with which these children tended to deal with their worlds of people, symbols, and things; the boys were likely to proceed in an abstract, symbolic manner, while the girls acted in a more direct and tangible manner.

Finally, although most of the children showed the pattern of linguistic achievement which characterized their own sex, several of them showed the opposite-sex pattern. For example, the boys in the "cross-over" group were more passive, more inhibited in expressing their emotions, and so on. These cross-over children showed more inner conflict, were more loosely organized as personalities, showed greater difficulty in establishing their own sex identification, and exhibited less effective all-round adjustment than did the majority of

the children. These findings, like many of the others, indicate the existence of a wide variety of meaningful relationships between patterns of personality structure and patterns of academic achievement.

We have assumed that the level and the pattern of academic achievement are related to how an individual perceives his world and relates to it. We found evidence to substantiate our assumption among the preadolescents whom we studied. Within the limits of this research, the findings indicate that groups of children who are similar in level or pattern of academic achievement are, in many respects, also similar in a variety of personality and other non-intellectual characteristics. But such findings, in themselves, do not indicate why such relationships exist. It is possible, however, that some of the common denominators underlying the relationships reported can be found by an examination of the tasks required in order to succeed on the tests of spelling and language, reading, and arithmetic.

To show a high level of proficiency on the spelling and language tests, the child must memorize and follow a collection of specific rules to the letter, and not deviate from them. This skill thus requires a propensity for attention to specific details and for following rules that have been laid down by others. The stimuli involved need not even reach a symbolic level (in the sense of representing something apart from themselves) but can remain specific learnings which are unmodified over time. Certainly there is little place for active generalization of the stimuli or of the rules associated with them, and no place for the flexible and active reorganization of these specifics or for the role of fantasy and creativity. Rather, intellectual passivity and the obedient carrying-out of rules learned by rote are essential for success in the tasks involved in these tests.

A somewhat different set of intellectual tasks is required to excel in reading speed and comprehension. Here success depends heavily on the rapid comprehension of verbal stimuli formed into complex patterns which represent emotions, ideas, or, more generally, ab-

stractions of events. That is to say, the individual must relate sets of stimuli to specific events, to previous experiences, or to abstract ideas, and, in so doing, he can depart from the world of tangibles and enter the world of symbolic meanings. Furthermore, reading can be used for many purposes, for example, for representing specific events in order to interpret and reflect upon them, or for pure fantasy, or for original symbolic thinking. Although reading relies on memory, the individual is not required to adhere to specific details to the extent that he must in spelling and the other mechanical linguistic tasks, but he is required to be intellectually active and to relate the symbols with their more tangible referents.

In order to achieve at a high level in arithmetic, the individual must be able to deal actively with abstract, symbolic relationships, which need not bear any direct relationship to the world of things and events. Although arithmetic skill generally requires memory and adherence to rules, the individual can make up his own symbols and discover the rules for himself. Thus a high level of skill in arithmetic requires active, controlled intellectual manipulations which do not have the freedom of unstructured and unrestrained fantasy but which do permit the individual almost endless originality and creativity in organizing the symbolic elements into new syntheses.

This research has not demonstrated a one-to-one tie between the intellectual skills required in order to achieve a high level of proficiency in the tests of spelling and language, reading, and arithmetic and the characteristic personality structure of the children who do well on these tests. The findings do indicate, however, a great deal of correspondence between the intellectual and the personality facets of behavior when "personality" is taken to mean the manner in which the individuals relate to other persons, or symbols, or things.

This appraisal of academic achievement differs in many respects from the formula: *Grade-point average* = *I.Q.* \times *Motivation*. Consequently it is relevant to ask the extent to which the intelligence-

test scores (Wechsler-Bellevue, Adult Form) are related to measures of general, linguistic, and arithmetic achievement (as indicated by canonical scores [5]). The product-moment correlation between the intelligence quotient and the general-achievement scores was .62, which is about as high as most intelligence tests correlate with each other. But one need not infer from this correlation that personality factors have nothing to do with academic achievement—or with intelligence-test scores, for that matter. Rather, it should be remembered that intelligence tests characteristically use the same kinds of problems that are found in achievement tests, and they usually have been standardized in terms of school marks. Furthermore, there is evidence to indicate that superior performance on intelligence tests is in large part a function of the same socialization factors which we found to be related to high general academic achievement (12, 13).

An additional argument for this conclusion is the fact that, whereas the factor of linguistic achievement correlated not more than $-.07$ with intelligence quotient, the arithmetic factor correlated $.59$. And, although arithmetic tasks usually appear in intelligence tests, linguistic skills (reading speed, comprehension, and attention to details) are also measured by intelligence tests. In view of the findings reported above, a more reasonable explanation of these correlations appears to be that the high general achievers and the high arithmetic achievers have developed (for whatever reason) personality and intellectual characteristics which also make for a high level of performance on intelligence tests.

Some of the characteristics common to the high general and the high arithmetic achievers were their self-confidence and assertiveness in facing new and difficult tasks; their ability to master anxieties; and their ability to channel their emotional energies in relating to persons and objects in the outside world and, while doing so, to function intellectually in an active, flexible, abstract, and independent manner. This set of characteristics was much less common to either of the groups high in linguistic achievement. Furthermore, if

the intelligence quotient alone were sufficient to account for the achievement scores of the children studied in this research, one would assume that almost all the children could have excelled on any or all of the academic tests with relative ease.

More often than not, however, children with the same intelligence quotients showed widely different patterns of academic achievement. Consequently, with respect to such questions as the prediction of academic achievement and the selection of persons for training in particular fields, it seems clear that the non-intellectual personality factors, as well as their intellectual correlates, must be considered in order to distinguish between those who can, and those who do, achieve in particular areas of endeavor.

If we think of academic achievement as a by-product of the socialization process, the question arises why learning difficulties occur in a cultural setting in which intellectual accomplishment is so highly prized. An explanation which follows from our general assumption—that the level and the pattern of academic achievement are related to how an individual perceives his world and relates to it—is that difficulties in the acquisition of the valued skills should result when the socialization process does not progress smoothly. Thus learning difficulties should occur when the conditions which normally facilitate the child's acceptance of the essential aspects and norms of his culture somehow goes awry. And, since the parents are the primary socializing agents, one would expect that disjointed parent-child relationships play a role in such learning difficulties.

Although learning problems occur in all academic subjects, linguistic difficulties may be used to illustrate the existence of disturbed socialization patterns, partly because language is one of the most significant and universal aspects of any culture and also because it seems to be learned without difficulty under normal conditions. Granted the absence of real incapacities, if a child develops marked linguistic difficulties, it may be assumed that his doing so results from conflicts in the pattern of socialization pressures imposed upon him, or is a symptom of rebellion against excessive pressures to ac-

quire the valued linguistic skills or against related pressures which have become intolerable, or is caused by inner conflicts resulting from the pressures. In any case, it is often observed that children who develop linguistic blocks or related learning difficulties characteristically have concurrent "emotional problems," which must be dealt with in order to alleviate the learning difficulty. A child who develops marked learning problems also provides himself with an ingenious means of self-defense and of frustrating and embarrassing his parents and teachers—particularly if they place primary emphasis on intellectual achievement. Furthermore, the development of such symptoms leaves the child immune from the usual punishments or other retributions that would probably result if he were to express openly his hostility toward the socializing agents. On the contrary, his development of such symptoms serves to satisfy certain emotional needs by giving the child added personal attention and sympathy, as well as relaxation of pressures to achieve.

Our findings clearly indicate that, in the setting of this study, it is not only the parents and, to a lesser extent, the teachers who exert pressures on a particular child to achieve academically. The other children, coming from similar backgrounds, also exert strong pressures which frequently are not openly observable but nonetheless add to the pressures imposed by adults. We observed, for example, that the children chose the high academic achievers to be the class leaders, apparently because of admiration for the intellectual prowess of the achievers, the pervasive competition among the children for the top marks, and their articulate awareness of the standing of all members of the class in the various subjects. A child would find it difficult to adjust to such a setting without responding to the peer-imposed pressures (3).

The findings of this research raise a number of important questions concerning the possible relations between socialization pressures upon children to achieve academically and our stated educational values and objectives. We have already considered some of

the apparent effects of such pressures on the development of character structure and the effect of character structure, in turn, on the extent to which gifted children acquire proficiency in such culturally valued skills as those required for high-level academic achievement. We have seen that, in some respects at least, academic achievement was furthered when parents, teachers, and peers exerted strong pressures on the children to utilize their energies in the interest of intellectual pursuits. But it appears that the consequences of such pressure were not wholly positive, and some of the negative side effects of exceptional academic achievement in preadolescents might easily be brushed away because of the positive aspects which are so highly prized by the adults in the cultural group which we studied.

Perhaps the first question that should be raised is whether it is at all necessary for these parents to exert strong pressures upon their children to achieve academically. Our knowledge to date suggests that, if the parents are themselves intellectually oriented and are not ambivalent about the value of intellectuality as a way of life, the child, as a matter of course, will accept the same value system and acquire the appropriate behavior patterns. We are not surprised, for example, that a child normally learns to speak English (or American) or Chinese or French, depending on the cultural context in which he is reared, in due time and without effort. But parents and teachers usually are not content to have their children acquire academic skills "normally" and "in due time" but have rather definite ideas regarding the degree of proficiency desired by certain ages. It becomes necessary, then, to exert pressures on children to get them to meet the schedules.

Let us grant (with some misgivings) that children must meet certain arbitrary time schedules in order to acquire the many diverse skills necessary to function as competent adults in our society. Even if we could list the number of skills and facts that they need to learn, we should still be faced with some fundamental but unanswered questions. Among these questions are: When should adults apply socialization pressure, and how much, to accomplish their notions of

the desired behaviors? What consequences result from the application of such pressures? Although psychologists and educators do not have answers to these questions, some of the findings of this research offer interesting comments on them.

Take the question of when and how much pressure should be applied. In many cases we found that the strong pressures exerted by parents to have their children excel academically were full blown by the time the children were in Grade III. Furthermore, by that time some of the children were responding to their parents' wishes in the desired manner. But it should be emphasized that not every child was a high academic achiever. Of the children who were exposed to roughly equivalent pressures to achieve, only a small number did so with relative ease and dispatch. Other children became tense, anxious, guilty, or rebellious and performed less well than they might have under more relaxed conditions. Some of the latter children seemed to be on the way to becoming academic casualties of their parents' excessive ambitions for them.

Some children can stand up well under pressures which seem to crush some of their classmates. It would be interesting to know the extent to which such factors as parental love and support, or permission for self-realization, interact with such factors as natural ability, temperament, and energy level to enable a child to respond favorably to strong pressures for academic achievement—and to do so without showing undue strain at the time or without laying the groundwork for later personality disturbances. It would be interesting to know also the most appropriate time periods for imposing such pressures in order to obtain the maximal learning of the desired skills and to insure their availability for adaptive use in the future. But we know only that all children should not be treated alike and that any one child should not be treated the same way at all times. The art that parents and teachers need to perfect involves the applying of socialization pressures compatible with the child's current perception of his world and of himself in relation to it, and with his emotional and intellectual capabilities at the time.

The question of possible undesirable side effects which might result from pushing a child to excel in all academic areas seems not to have been asked by some of the parents who exerted such pressures. Partial answers to this question are provided, however, by the children who by Grade VII began to show the possible consequences of their parents' pressure on them. In some of the children these consequences include, of course, a remarkable degree of intellectual proficiency and accomplishment in both the extent and the depth of their learning and in the extent to which they took over adult-like behaviors and value systems. Without question, such consequences satisfy the wishes of the parents of these children.

It is much less likely that these same parents would appraise so favorably various other characteristics which also seem to result from excessive socialization pressures. For example, by Grade VII the high general achievers seemed to have devoted themselves to intellectual accomplishment with a vengeance and to have become over-intellectualized, almost to the exclusion of other interests and activities. In arriving at this point, they had become somewhat disdainful of adults and hostile toward, and competitive with, their peers in order to maintain the position of intellectual superiority in the group. They also experienced a mounting level of anxiety (which apparently fed back to help them in their drive toward further accomplishments) and a decline in free creative thinking.

Assuming that the high general achievers in this sample are representative of countless others from similar backgrounds, we may well ask: Does very high academic accomplishment at this age level always tend to have such side effects? If so, can this pattern of pre-adolescent socialization and its consequences be considered desirable? It remains to be seen how these children will fare as they continue to mature.

A variety of additional questions are raised by this research but are not touched upon, since the findings reported here pertain only to the preadolescent period. Some of these questions are: Will the personality structures shown by these children facilitate, or interfere

with, the emotional and interpersonal readjustments that accompany successful transition into adolescence? If strong socialization pressures must be applied before individuals can be expected to master intellectual skills at a high level, should such pressures be applied before and/or after adolescent changes have occurred in order to realize the optimally desirable effects of such pressures? What kinds of persons will these children be as adults? To what ends will they use their knowledge, abilities, and skills? Will these ends be compatible with our value systems and our social goals? What fields or activities will they select, and will they be creative and productive in their work? How will they relate to their fellow men, and will they be able to work in harmony with them? What kinds of parents will they become? How will they attempt to socialize their own children?

Thus it appears that this research has raised more questions than it has answered (4). But such questions are not unique to this research or to the children whom we studied; they are typical of the many questions that face teachers and parents in our common efforts to educate and socialize our youth, to help them take their place in society and to contribute to it.

Because of the limitations of our present knowledge, many of the crucial questions which pertain to educational theory and practice remain unanswered. Even so, the increasing store of knowledge, based on the wisdom of sensitive teachers and the findings of research workers, enables us to draw some inferences that are relevant to the conduct of our educational enterprise. The findings of this research indicate that, as far as academic achievement is concerned, one can have too much of a good thing and that, if carried to excess, socialization pressures may serve to cripple the child, both emotionally and intellectually.

These findings also indicate that, as a child matures, he learns to respond to himself and to his environment in characteristic ways. In other words, he develops a personality structure which serves to regulate the whole range of his experiences and behaviors. In this context, academic skills and tasks are not unique but are responded to

in different ways by different children. Usually we find that, for a given child, certain academic areas more than others are compatible with his personality structure, with the result that he will show an affinity for some school subjects and will find others much more difficult. And since children differ, it seems futile to expect all children to do equally well in all subject-matter areas.

A number of questionable consequences result when parents or teachers expect their children to achieve uniformly well in all subjects. Among the possible undesirable consequences are a growing distaste for the subject (or school and learning in general); unnecessary feelings of personal inadequacy because of inability to live up to expectations; or a dissipation of any genuine talent that might exist, because of being expected to do everything well (not being allowed to do anything poorly). If our society is to utilize fully the native talents of its gifted members, it seems appropriate to encourage the children who show a high level of talent in certain areas to develop proficiency in those areas even though they may do less well in areas which they will brush aside as soon as they leave school.

In conclusion, one additional set of findings deserves comment. The high achievers in arithmetic showed a cluster of personality and intellectual characteristics which are considered extremely desirable in our society. These include a healthy ego, which is relatively free from conflicts and anxieties; ability to act independently and to get along well with others; and such intellectual qualities as creativity, flexibility, and the ability to deal handily with abstract symbols and relationships.

This list of qualities corresponds to the so-called benefits of mental training or, more specifically, the old doctrine of formal discipline. Although we found evidence of a strong relation between the mastery of arithmetic skills and relative maturity of thought and action, our interpretation of this relationship and the interpretation provided by the doctrine of formal discipline differ fundamentally. Specifically, this difference has to do with the question whether clear, flexible, independent thinking, and even mature personal adjustment, results from training in such subjects as mathematics and the

classics, or whether children who are developing into healthy, stable, mature individuals are also sufficiently free from personality disturbances and anxieties as to be able to perform with proficiency the intellectual tasks associated with arithmetic achievement. Our findings indicate that the best way to produce "clear thinkers" is to help children develop into anxiety-free, emotionally healthy individuals who are also trained to master a variety of intellectual tasks.

APPENDIX

THE RESEARCH PROGRAM AND PROCEDURE

THE SETTING

The setting for this research was the Laboratory School of the University of Chicago, where a hand-picked staff is devoted to the education of a highly selected student body. In this environment, superior achievement is both expected and highly prized. Teachers and other school personnel are constantly on the alert to find additional factors which foster successful student adjustment and accomplishment. The students seem to have set for themselves equally high aspirations. In addition, the parents of these children co-operate actively with the school and its aims. The degree of concern which both teachers and parents show with respect to student progress is evidenced in the policies of student selection, the general competence of the teachers, and the quality and range of curricular activities. By and large, the program is designed to foster superior academic achievement, and, all things considered, it is remarkably successful in this respect.

DATA AND METHODS OF PROCEDURE

In order to trace the developmental trends and interrelationships mentioned above, we decided to concentrate most of the testing time on three periods: when the children were 8-9, 11-12, and 14-15 years old (when they were preadolescent, were approaching puberty, and were adolescent). This procedure was followed to obtain a stable picture of each child and the extent to which this picture remains stable, or shifts, as he enters adolescence. During each of these testing periods we obtained data on the extent and nature of parental pressures; the personality structure of the child, as indicated by personality tests; behavioral observations of the child in and out of classrooms; the child's level of intellectual ability and his academic achievement in a variety of subject-matter areas.

a) *Parental pressures.*—Our attempts to obtain accurate information on the complex of parental pressures included interviews with the parents; questionnaires filled out by the parents; teachers' reports of parental concerns regarding particular subject-matter areas if the child was thought to have fallen behind where he should be; and various other sources, such as the cumulative file on

each child in the Records Office of the school. Such information, when collated, gave us a fairly good idea of the manners in which the parents dealt with their children (rational, overprotective, intrusive, and the like) and in relation to what areas (achievement, social conformity, emotionality, and so on) they exerted socialization pressures.

It was not possible, of course, to obtain information on many of the important ways in which parents exert pressures on their children to "do better" in school or otherwise to change their behavior, since much of what goes on between them occurs in private. Furthermore, such pressures may not even be expressed openly by the parents but may be communicated to the child by a chilling attitude, a forced smile, an expression of hurt feelings, or a proud look or feeling of warmth toward the child. We believe that the lack of such crucial information is compensated for, in part, by information obtained on the personality tests, which gives some picture of how the child perceives adults and the pressures that they exert and how the child responds to parents and others and to the socialization pressures they put upon him.

b) *Personality tests.*—During each of the testing periods each child was given a series of personality tests which were designed to provide information concerning various important aspects of his personality and mode of mental functioning. For example, we were interested in learning as much as we could about such aspects as his perception of the world, of superiors, peers, and siblings; his attitudes toward himself and others; areas of impulse conflict and mastery; and his internalized attitudes, values, and aspirations. The tests which we used included the Rorschach, the Children's Apperception and the Thematic Apperception Tests, the Draw a Person Test, Sentence Completion Tests, and a few others. In such tests there are no "correct" answers; the child is permitted to respond to them in any way he wishes. (It goes without saying that all the data collected by the research staff of this project are confidential and available only to the personnel involved in this research.)

c) *Behavioral observations.*—Throughout the duration of this study the members of the research staff and the teachers made periodic observations of the children in all classrooms, during the lunch hour, on the playground, and frequently at school social activities. This was done to obtain a balanced picture of the various areas of proficiency of each child. Some of these observations were made by members of the research staff who had come to know the children and to be friends with them. Other behavioral data were provided by the teachers who reported on the children's attitudes, efforts, and involvements with particular subject-matter areas, as well as their day-to-day proficiency in them. Information concerning how the children actually responded to the academic subjects, to the fine-arts program, or in free social situations was collected to balance the personality-test data and to give a fuller picture of how the child functioned in the school setting.

d) *Mental-ability tests.*—As part of the regular testing program in the Laboratory School, the children were given a battery of standardized, individual and group intelligence tests. These tests include the Primary Mental Abilities Tests, the Stanford-Binet, and the adult form of the Wechsler-Bellevue tests.

e) *Academic-achievement tests.*—The systematic testing of reading, spelling, and arithmetic proficiency is introduced into the Laboratory School curriculum in Grade III, and the testing of grammar, punctuation, and related linguistic skills is started in Grade IV. Since a central focus of this research involves a study of factors related to academic achievement, and since these skills are fundamental to the later development of more complex intellectual tasks, satisfactory measures of proficiency in arithmetic and various linguistic skills were essential to this research. The standardized achievement tests employed were chosen because of their compatibility with the school's educational program, their desirable psychometric characteristics, and their availability in parallel forms.

Beginning in Grade III and for each subsequent year, the Records Office administered standardized tests of reading, arithmetic, and spelling at the beginning and the end of each academic year. In Grade IV an additional language test was used, which measured proficiency in such skills as punctuation, capitalization, and use of the rules of grammar. The test scores for each child for each year provided the basic measures of academic achievement used in this research.

The standardized test scores were used to provide two indices: the general level and the pattern of academic achievement. "General level" indicates the average performance over all the tests, whereas "pattern" refers to a marked discrepancy among the scores from test to test. Thus, for example, a child who does uniformly well on all the linguistic and arithmetic tests will have a "high general level" of achievement. A child who does very well in reading but earns low scores on the spelling, language, and arithmetic tests will have a "high reading achievement" pattern.

Two methods of working with the test scores were used in order to study the personality correlates of achievement level and pattern. One method involved using the test scores themselves to identify those children who earned uniformly high (or low) scores on all the tests as an indication of general level of achievement, and to identify children who earned a high score on one test and relatively low scores on the remainder—in relation either to the performance of the total class or to his own average performance on all the tests (8, 14). The other method involved an analysis of all the achievement data in order to provide a new set of scores for each child, which indicated his general level of achievement and the extent to which his performance on the reading, spelling, language, and arithmetic tests were higher or lower than one would expect on the basis of his general level of performance (5). Although the latter method has a number of advantages statistically and permits a more comprehensive analysis of the data, the findings obtained by each of these methods are in essential agreement.

COLLECTING THE DATA

The design of this research was set up to enable us to collect systematically a variety of types of data in order to provide measures which pertain to the children's patterns of socialization, personality, and mental processes as these develop over time, especially as they act in concert and relate to patterns of academic achievement. In all cases, data were collected on those children who were in Grade III when the study was begun and who were in attendance each consecutive year. Of the seventy-six children initially in the study, forty-five remained through Grade VII and are called our "core" group. These children provided us with our longitudinal data. The findings reported here are restricted to the interrelationships which were found to exist among these data. In addition, we frequently tested all the children in each grade, either to obtain norms for better appraisal of the performance of our core group of subjects or to carry out various sub-studies bearing on our major research interests.

It is highly probable that such extensive sets of data could have been obtained only in a research-oriented laboratory school. Nevertheless, the collection of data in this type of setting presents its own difficulties. Besides the usual inconveniences to teachers and pupils alike, the children (being bright and frequently subjected to testing and observation) were generally rather sophisticated regarding the "personality tests" and frequently took pleasure in trying to thwart our research aims. Or when they knew that one of our observers was around, they often acted with constraint or else tried to put on a show for him.

In order to circumvent such inconveniences, and at the same time to obtain meaningful research data, we worked as closely as possible with the teachers themselves. We sat in their staff meetings and invited them to join ours in order to build mutual understanding of our common interests and aims. Some of the teachers became active participants in the research and also provided us with invaluable data, such as day-to-day classroom tests, and, where feasible, made assignments which would provide us with information not otherwise obtainable. The teachers of the social sciences and of English, for example, made assignments for themes on topics such as problems of getting along with others or writing an original myth. Also, when it was possible to do so, we arranged with the school administration to pay some of the salaries of certain regular teachers and teaching assistants so that they could devote part of their time to the work of this research project. This was done to help obtain data on the children when, to their knowledge, they were not being observed by members of our research team. We also profited greatly from the teachers' general experience and knowledge of the children. Several of the teachers were especially helpful in providing important sources of data and, in many ways, contributed substantially to this research.

NOTES

1. This research was supported by the National Institute of Mental Health of the National Institutes of Health, U.S. Public Health Service, under research

grant M-912, and by the Social Science Research Committee of the University of Chicago. Space and other facilities were provided by the Laboratory School and the Department of Education, University of Chicago. We are especially grateful to the teachers and to the members of the administration and Records Office staffs who gave of their time and in many ways contributed to this study.

2. This limitation of the scope of our findings excludes our consideration of various related findings, such as the personality correlates of characteristic modes of approach in problem-solving (6), or the patterning of mental abilities (7), or of patterns of social behavior (10), or various modes of perceiving and organizing reality and their relation to academic achievement (16), or of impulse mastery (20), or of certain statistical and methodological questions (11, 19). This presentation similarly precludes consideration of various other important questions, such as the extent to which preadolescent personality and achievement patterns, and relationships between them, remain stable during the transition into adolescence. The findings which are reported in this article are drawn primarily from studies by d'Heurle (8), Fox (9), and Tarini (18).

3. In a related study (15) it was found that the children who attended this school showed shifts in the obtained intelligence quotients in the direction of the average of the children in their class, and that the longer the children were in attendance, the more nearly their intelligence quotients approximated the average of their classmates. The usual finding is, of course, that on repeated testings a child's intelligence quotient will tend to "regress toward the mean" of the national average of 100.

4. Findings which bear on some of these questions have been obtained in various other research projects. For example, in a four-year study of college students (in process of publication), which similarly considered the interplay of various personality and intellectual factors, it was found that the Freshmen who entered college with characteristics similar to the high general achievers described above tended to take the academic honors during their first year in college but did not show the degree of personal and intellectual growth that was evidenced by students who entered college with less impressive academic records, less inclination to intellectualize all their experiences, less tightly organized personality structures, and less efficient mental processes. By the Senior year, however, students in the latter category frequently surpassed their (academically more "promising") classmates on standardized academic achievement tests and, in addition, showed a more flexible personality structure, a broader range of cultural interests, a greater ability to relate to others and to be liked by them, and a more creative approach to new problems and situations.

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Social Factors Affecting Academic Performance: Further Evidence

Factors other than intelligence which influence the academic performance of high-school students have been investigated in a number of studies in recent years (1, 2, 3, 4, 5). Among the factors analyzed have been social class, home conditions, peer relations, aspiration levels, and academic inclination. Since none of the studies to date can be considered definitive, this report is offered as a contribution to the limited empirical data relating social factors to student achievement. The findings reported here are, in many instances, consonant with those of earlier studies. Some of the data, however, fail to support the conclusions of previous studies. This fact should, at the very least, emphasize the need for proper precautions in drawing generalizations from any of the studies employing limited data, including the investigation reported here.

The research operation providing the data for this report was essentially a demonstration project conducted for and by a sociology class composed largely of advanced undergraduate students majoring in education at the University of Kentucky in the fall semester of 1956. The implementation of the project was made possible through the co-operation of the principal and staff of a large county junior high school in the Blue Grass region of Kentucky, who assisted in the planning of the research and in the selection of students as subjects.

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The general hypothesis of the study was that two groups of junior high school students who are judged to have approximately the same potential for academic work, as measured by intelligence-test scores, but who differ in actual academic performance will differ significantly with respect to each of the selected test variables. The subjects selected were students whose total test scores on the California Short Form Mental Maturity Intermediate Battery corresponded to intelligence quotients in a narrow (ten-point) middle range. Home-room teachers of Grades VIII and IX were instructed to select, from among their charges, two students of "average" intelligence, one of whom was considered an over-achiever and the other an under-achiever. No rigid criteria were set forth for the definition of these achievement categories, the primary specification being that actual academic performance should clearly either exceed or fall below what might be expected on the basis of mental-test scores. It was not necessary that over-achievers be among the best in their classes nor under-achievers among the worst. However, since all subjects were presumably of average intelligence, the over-achievers were probably doing better-than-average work; the under-achievers, poorer-than-average. All subjects were interviewed by members of the sociology class conducting the study, using an interview schedule designed to secure both social and attitudinal data (6). The findings reported below are from interviews of forty-eight students, half over-achievers and half under-achievers.

Statistically significant differences (7) between over-achievers and under-achievers were found on six of thirty data items. The significant items, with probabilities of chance occurrence shown in parentheses, were the following: sex (.001), membership of parents in the parent-teachers' association (.05), attitudes toward school (.001), occupational ambitions (.01), perception of occupational ambitions held for them by parents (.01), and punishment and scolding received for making poor marks (.01).

Appreciable differences between the two groups that approached

significant levels (and in all cases had a probability of chance occurrence of less than 1 in 5) were found with respect to five other factors: marital status of parents; employment of mothers; students' concern about doing good schoolwork; time spent daily on school studies at home; and types of persons named as models, "ideals," or objects of admiration.

Equally interesting are some of the instances of lack of significant differences between the two groups, especially where, on the basis of previous studies, considerable difference was expected. Of particular importance is the fact that no significant differences were found on any of the items selected as indicators of social class: occupation of father, education of father, education of mother, family size, and schooling expectations of the students.

At least four of the six statistically significant differences support findings of earlier studies. A heavy preponderance of girls among over-achievers is a frequently observed phenomenon, for which various explanations have been offered, ranging from the lesser appeal of schoolwork for boys to discrimination by women teachers (2). In this study only seven of the twenty-four over-achievers were boys, and only four of the twenty-four selected under-achievers were girls. Conceivably this disproportionate sex representation could have stemmed from bias on the part of the selectors, but a more plausible explanation is that, at the junior high school level, academic achievement possesses greater value for girls than for boys. At this age the American boy is frequently seeking to validate his maleness through appropriate behavior, and scholastic achievement probably does not serve this function as well as does performance in other areas—athletics, for example. Furthermore, the frequent lack of comparable alternatives for girls may tend to channel their strivings for recognition into academic pursuits, thus further discouraging male efforts by lending a feminine "taint" to intellectual achievement.

Earlier evidence that parents of over-achievers are more inter-

ested than parents of under-achievers in the schooling of their children is supported by data on the membership of the two groups of parents in the parent-teachers' association. Three-fourths of the over-achieving students reported that both parents were members, and the remainder reported that their mothers were. In contrast, a fourth of the under-achievers reported that neither parent was a member, and less than half said that both parents were members.

It is difficult to avoid the inference that parental interests in school are transmitted directly to students when the preceding data are examined in conjunction with data on attitudes toward school expressed by members of the two achievement groups. Twenty of the twenty-four over-achievers compared with six of the under-achievers claimed to like school "very much." However, only two of the under-achievers and no over-achievers indicated actual dislike of school. Remaining respondents of both groups gave neutral replies. There are two readily apparent explanations for the relationship between academic achievement and attitude toward school. Students may work hard because they enjoy schoolwork, or they may enjoy schoolwork because they are relatively successful at it. Probably the relationship is reciprocal, but it should be recognized that only one variable is readily manipulatable. The teacher cannot make the student successful so that he will like schoolwork; the chances are considerably greater for making schoolwork enjoyable so that the student will exert himself.

At least one previous investigation of over-achievers and under-achievers produced evidence that the former are considerably more likely to have definite vocational aims (4). The data from the present study reveal differences in the vocational ambitions of the two groups, but the major difference lay not in the clarity or specificity of their aims but in the choice. Eighteen of the twenty-four over-achievers aspired to professional occupations—medicine, law, teaching, and engineering—while only eight of the under-achievers indicated such a preference. The naming of relatively glamorous occupations, such as professional athlete and airline pilot, by half a dozen under-achiev-

ers probably indicates lesser maturity. However, others of the under-achieving group made choices, such as mechanic, secretary, and building contractor, that appear to reflect realistic self-evaluations. Only one under-achiever and two over-achievers failed to express a definite vocational choice.

A difference between the two groups was also found in their responses to the question of what occupation they thought their parents wanted them to follow. Two-thirds of the over-achievers reported that their parents wanted them to enter professions, while less than a fourth of the under-achievers believed their parents wanted them to pursue professional careers. A third of the over-achievers and two-thirds of the under-achievers said they did not know what their parents wanted them to become. One interpretation of this difference, which would support the conclusions of other studies, is that over-achievers have closer relations with their parents.

Further evidence of a difference in relations with parents is supplied by the responses of the two groups when they were asked whether their parents would scold or punish them for poor marks. Three-fourths of the under-achievers but only one-sixth of the over-achievers believed that their parents would scold them. Nine of the under-achievers and only one over-achiever reported that their parents would employ more severe punishment. These responses must be interpreted with some caution, however, since they were undoubtedly influenced by actual experience, and under-achievers were more likely to have received poor marks in the past. There was no significant difference between the two groups in the number who reported receiving rewards for making good marks. Nine over-achievers and ten under-achievers said that they were given rewards, usually money.

Other differences between the two groups that approached statistical significance deserve brief comment. All but one of the over-achieving students reported that their parents were living together, whereas five of the twenty-four under-achievers reported homes broken by death, separation, or divorce. Thirteen of the under-

achievers reported mothers employed outside the home compared with seven over-achievers. Despite the evidence on probable reactions of parents to poor marks, fifteen over-achievers compared with nine under-achievers expressed "considerable concern" about doing good schoolwork. Seventeen over-achievers but only eleven under-achievers claimed to spend an hour or more daily on homework. A final important difference (with less than a .10 probability of chance occurrence) appeared when members of the two groups were asked to name persons who were "ideals" or whom they admired very much. Under-achievers were considerably more likely to name glamor figures—athletes, television and movie stars, and similar personages. In part this difference must be explained by the heavy preponderance of males in the under-achieving group, who frequently named college and professional athletes as models. But if this fact explains the responses, it may also explain why males are so heavily over-represented in the group of under-achievers. It is also noteworthy that twice as many over-achievers as under-achievers (ten to five) mentioned teachers as persons whom they admired.

In view of the numerous studies documenting the influence of social-class status upon scholastic achievement, some of the findings of this study are surprising. Occupational distributions of the fathers of the two groups did not differ significantly, although eight fathers of over-achievers were in professional occupations compared with four fathers of under-achievers. Family size did not differ appreciably for the two groups, nor did the educational characteristics of either fathers or mothers. Seven over-achievers and 6 under-achievers reported that their fathers were college graduates; six mothers of over-achievers and five mothers of under-achievers were reported to hold college degrees. Finally, there was relatively little difference in the aspirations for further schooling expressed by members of the two groups. What is significant is the extent to which a college education appears to have become a normal expectation of junior high school youth, if evidence from this limited sample can be considered an even slightly reliable index. Of the forty-eight stu-

dents, twenty-one over-achievers and eighteen under-achievers said that they expected to continue their educations through four years of college.

A plausible, although not entirely convincing, explanation of the failure of social-class differences to appear as expected is that social status is more closely associated with performance on intelligence tests than with achievement when intelligence is controlled. If this is the case, the restriction of subjects to students of "average intelligence" possibly reduced social-class differences below a significant level.

The evidence from this limited study is obviously inadequate to support any broad generalizations. Yet it provides guides to the understanding of why students with comparable scores on intelligence tests differ widely in academic achievement. Most of the findings of significant differences between over-achievers and under-achievers can be related to two fundamental propositions. The first is that the academic performance of junior high school students must be viewed within the broader context of socially defined age and sex roles. The second is that parental interests in, aspirations for, and relations with, their children exert a powerful influence on the children's schoolwork.

With respect to the first proposition, it is suggested that the concern of junior high school boys with establishing their identities as males serves to channel their interests and energies into activities that fulfil this goal more effectively than does academic achievement. This same concern explains, in part, their vocational aspirations, which often border on fantasy, and their selection of glamor figures, particularly athletes, as behavioral models. Admittedly, this explanation does not account for the over-achievement of girls—a phenomenon which deserves considerably more attention than it has received.

The second proposition—that parental interest and attitudes influence the children's schoolwork—undeniably appears trite, but it

cannot be lightly dismissed as a mere aphorism. Until its full implications are utilized as guides to action, rather than being simply acknowledged, attempts to motivate students to academic achievement commensurate with their intellectual potential have little likelihood of success.

Finally, it is suggested that the lack of apparent social-class differences between over-achievers and under-achievers in the reported data should not be interpreted to mean that social-status characteristics are not influential in this regard, especially in view of the evidence to the contrary obtained in other studies. Rather, the chief inference which should be drawn is that explorations of social factors affecting academic achievement which fail to go beyond the mere recognition of social-class differences have been brought to a premature conclusion.

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7. χ^2 was employed in testing all differences, and probabilities below .05 were considered statistically significant.

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Social Behavior and the Administrative Process

Perhaps the most vigorous movement in administration in recent years has been directed toward the development of a comprehensive theory capable of generating both hypotheses for guiding research and principles for guiding practice. Despite many specific advances in special areas, such as hospital administration, public administration, business administration, and educational administration, there still is no general conceptual framework for systematizing and interrelating our knowledge within and among these areas. It is still impossible to speak of administration in terms that would be acceptable to, or for that matter even readily understandable by, students and practitioners in the several special fields. This failure to conceptualize administration on a general theoretical level has been a major obstacle to the development of administration as a rigorous discipline, and the elaboration of theory is accordingly receiving increased attention both in "research" and "applied" administrative settings.

The purpose of the present paper is twofold: (a) to describe a socio-psychological theory of social behavior having broad application to the area of administration and (b) to illustrate the application of the theory to major issues in administration. The four major issues considered here are: the problem of institutional and individual conflict; the problem of staff effectiveness, efficiency, and satis-

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faction; the nature of various leadership-followership styles; and the problem of morale.

The process of administration deals essentially with the conduct of social behavior in a hierarchical setting (1). Structurally, we may conceive of administration as a series of superordinate-subordinate relationships within a social system. Functionally, this hierarchy of relationships is the locus for allocating and integrating roles, personnel, and facilities to achieve the goals of the system.

The term "social system" here is conceptual rather than descriptive; it must not be confused with "society" or "state" or as somehow applicable only to *large* aggregates of human interaction. Thus, within our framework, for one purpose a given community may be considered a social system, with the school a particular organization within the more general social system; for another purpose the school itself, or even a single class within the school, may be considered a social system in its own right. The theoretical model that we are proposing is applicable regardless of the level or the size of the unit under consideration.

We conceive of the social system as involving two major classes of phenomena, which are at once conceptually independent and phenomenally interactive. There are, first, the *institutions* with certain *roles* and *expectations* that will fulfil the goals of the system. Second, inhabiting the system there are the *individuals* with certain *personalities* and *need-dispositions*, whose interactions comprise what we generally call "social behavior." Social behavior may be apprehended as a function of the following major elements: institution, role, and expectation, which together constitute the *nomothetic*, or normative, dimension of activity in a social system; and individual, personality, and need-disposition, which together constitute the *idiographic*, or personal, dimension of activity in a social system.

To understand the nature of the observed behavior and to be able to predict and control it, we must understand the nature and relationships of those elements. The term "institution" has received a

variety of definitions, but for our purposes it is sufficient to point out that all social systems have certain imperative functions that come in time to be carried out in certain routinized patterns. These functions—governing, educating, policing, for example—may be said to have become “institutionalized,” and the agencies established to carry out these institutionalized functions for the social system as a whole may be termed “institutions.” These institutions have certain noteworthy characteristics.

a) Institutions are *purposive*. They are established to carry out certain ends, and these ends serve as the criteria against which institutional practices are ultimately evaluated.

b) Institutions are *peopled*. If institutions are to carry out their prescribed goals, human agents are required. It should be noted, however, that here we are concerned with people, not in the personalistic sense, but in the actuarial sense. To avoid the possibility of confusion, we may adopt the term “actor” instead of “person” for this level of analysis.

c) Institutions are *structural*. To carry out a specific purpose requires an organization, and organization implies component parts and some rules about how these parts should be interrelated. If the goals and purposes of the institution are known, the tasks to achieve the goals may be specified, and these may be organized into *roles*. Each role is assigned certain responsibilities and concomitant resources, including authority and facilities for implementing the given tasks. A significant feature of such a blueprint or “table of organization” of roles is that it is most frequently set up *before* the selection of any real incumbents for the roles; it is set up in terms of *actors*, in the sense previously defined. And if we may anticipate ourselves a little here, the real person may or may not exactly fit the given roles. As we shall see, this question of fitness poses, in many ways, one of the critical dilemmas of administration.

d) Institutions are *normative*. The fact that tasks for achieving the institutional goals are organized into roles implies that the roles serve as “norms” for the behavior of the role incumbents or actors. The

role expectations are obligatory upon the actor if he is to retain his legitimate place in the institution.

e) Institutions are *sanction-bearing*. The existence of norms is of no consequence unless there is adherence to them. Accordingly institutions must have at their disposal appropriate positive and negative sanctions for insuring compliance with the norms, at least within broad limits.

The most important subunit of the institution is the role. Roles are the structural elements defining the behavior of the role incumbents or actors. The following generalizations may be made about the nature of roles.

a) Roles represent *positions, offices, or statuses within the institution*. The role itself may be described, in the words of Linton, as the "dynamic aspect" (2:14) of such positions, offices, or statuses.

b) Roles are defined in terms of *role expectations*. A role has certain normative rights and duties, which may be termed "role expectations." When the role incumbent puts these rights and duties into effect, he is said to be performing his role. The expectations define for the actor, whoever he may be, what he should do under various circumstances as long as he is the incumbent of the particular role.

c) Roles are *institutional givens*. Since the role expectations may be formulated without reference to the particular individuals who will serve as the role incumbents, it is clear that the prescriptions do not depend on individual perception or even on typical behavior. Although the expectations may be misperceived or even serve as points of departure for the actual role incumbents, their crucial significance as blueprints for what *should* be done is not thereby nullified.

d) The behaviors associated with a role may be thought of as lying along a *continuum from "required" to "prohibited"*. Certain expectations are held to be crucial to the role, and the appropriate behaviors are absolutely required of the incumbent. Other behaviors are absolutely forbidden. Between these extremes lie certain other behaviors, some of which would be recommended and others perhaps mildly disapproved, but all of which would be considered per-

missible, at least in the ordinary case. It is this flexible feature of roles that makes it possible for role incumbents with different personalities to fulfil the same role and give it the stamp of their individual styles of behavior.

e) Roles are *complementary*. Roles are interdependent in that each role derives its meaning from other related roles in the institution. In a sense, a role is not only a prescription for the role incumbent but also for incumbents of other roles within the organization, so that in a hierarchical setting the expectations for one role may, to some extent, form the sanctions for a second interlocking role. For example, the role of sergeant and the role of private in the army cannot really be defined or implemented except in relation to each other. This quality of complementariness fuses two or more roles into a coherent, interactive unit and makes it possible for us to conceive of an institution as having a characteristic structure.

So far in our analysis it has been sufficient to conceive of the role incumbents as only "actors," devoid of personal or other individualizing characteristics, as if all incumbents of the same role were exactly alike and implemented the given role in exactly the same way. But roles are filled by real, flesh-and-blood persons, and no two persons are exactly alike. An individual stamps the particular role he fills with the unique style of his own characteristic pattern of expressive behavior. Even in the case of the relatively inflexible roles of sergeant and of private, no two individual sergeants or privates fulfil the roles in exactly the same way. To understand the observed behavior of a specific sergeant and a specific private, it is not enough to know only the nature of the roles and of the expectations (although their behavior cannot be understood apart from these), but we must know the nature of the individuals inhabiting the roles and reacting to the expectations as well. That is, in addition to the nomothetic, or normative, aspects, we must also consider the *idiographic*, or individualizing, aspects of social behavior. Now, just as we were able to analyze the institutional dimension into the component ele-

ments of role and expectation, so we may analyze the individual dimension into the component elements of *personality* and *need-disposition*.

The term "personality," like that of "institution," has been given a variety of meanings. For our purposes, "personality" may be defined as the dynamic organization within the individual of those *need-dispositions* that govern his unique reactions to the environment. The central analytic elements of personality are the *need-dispositions*, which we may well define, with Parsons and Shils, as individual "tendencies to orient and act with respect to objects in certain manners and to expect certain consequences from these actions" (3:114). Or, as the same authors go on to say: "The conjoined word 'need-disposition' itself has a double connotation; on the one hand, it refers to a tendency to accomplish some end state; on the other, it refers to a disposition to do something with an object designed to accomplish the end state" (3:115).

Returning to the example of the sergeant and the private, we may now make an essential distinction between the behavior of two individuals with a need-disposition for "submission" in the roles of sergeant and private and the behavior of two individuals with a need-disposition for "ascendancy" in the same roles. In short, to understand the behavior of specific role incumbents in an institution, we must know both the role expectations and the need-dispositions. Indeed, needs and expectations may both be thought of as *motives* for behavior, the one deriving from personal propensities, the other from institutional requirements. What we call social behavior may be conceived as ultimately deriving from the interaction between the two sets of motives.

The general model we have been describing may be represented pictorially as indicated in Figure 1. The nomothetic axis is shown at the top of the diagram and consists of institution, role, and role expectations, each term being the analytic unit for the term next preceding it. Thus the social system is defined by its institutions; each institution, by its constituent roles; each role, by the expectations at-

taching to it. Similarly, the idiographic axis, shown at the lower portion of the diagram, consists of individual, personality, and need-dispositions, each term again serving as the analytic unit for the term next preceding it. A given act is conceived as deriving simultaneously from both the nomothetic and the idiographic dimensions. That is to say, social behavior results as the individual attempts to cope with an environment composed of patterns of expectations for his behavior in ways consistent with his own independent pattern of needs. Thus we may write the general equation: $B = f(R \times P)$, where B is observed behavior, R is a given institutional role defined

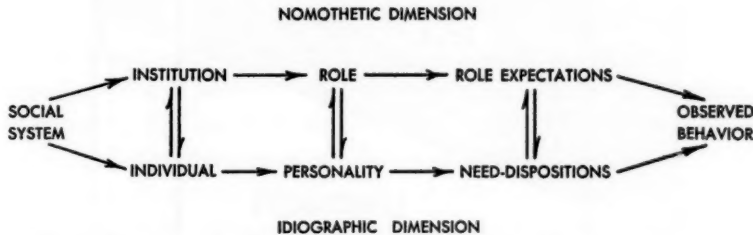


FIG. 1.—General model showing the nomothetic and the idiographic dimensions of social behavior.

by the expectations attaching to it, and P is the personality of the particular role incumbent defined by its need-dispositions.

The portions of role and personality factors determining behavior vary with the specific act, the specific role, and the specific personality involved. The nature of the interaction can be understood from another graphic representation shown as Figure 2. The factors entering into a given behavioral act may be conceived as occurring at a line cutting through the role and personality possibilities represented by the rectangle. At the left, the proportion of the act dictated by considerations of role expectations is relatively large, while the proportion of the act dictated by considerations of personality is relatively small. At the right, these proportions are reversed, and considerations of personality become greater than considerations of role expectations. In these terms, for example, the behavior of our army

private may be said to conform almost entirely to role demands (Line A), while the behavior of a free-lance artist derives almost entirely from personality dispositions (Line B). In either case, behavior, insofar as it is "social," remains a function of both role and personality although in different degrees. When role is maximized, behavior still retains some personal aspects because no role is ever so closely defined as to eliminate all individual latitude. When personality is maximized, social behavior still cannot be free from some role

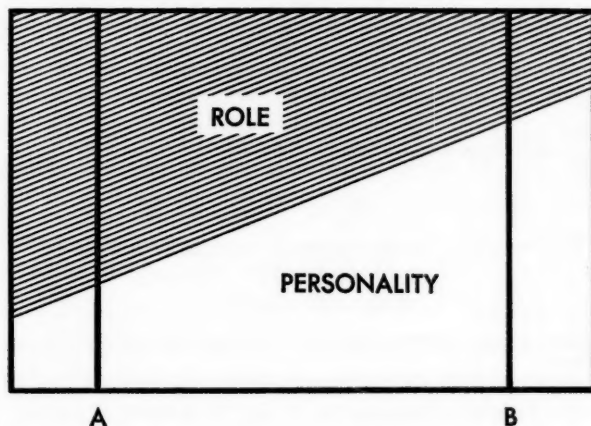


FIG. 2.—The interaction of role and personality in a behavioral act ($B = f [R \times P]$)

prescription. The individual who divorces himself entirely from such prescription ceases to communicate with his fellows and is said to be autistic.

The relevance of this general model for administrative theory and practice becomes apparent when it is seen that the administrative process inevitably deals with the fulfilment of both nomothetic role expectations and idiographic need-dispositions while the goals of a particular social system are being achieved. The unique task of administration, at least with respect to staff relations, is just this: to integrate the demands of the institution and the demands of the staff members in a way that is at once organizationally productive and individually fulfilling.

In the framework outlined here, we may proceed to a reformulation of certain recurring administrative problems and to a clarification of the issues involved.

1. *Individual and institutional conflict*

When an individual performs up to role expectations, we may say that he is *adjusted* to the role. Conversely, when an individual fulfils all his needs, we may speak of him as *integrated*. Ideally, the individual should be both adjusted and integrated, so that he may by one act fulfil both the nomothetic, or institutional, requirements and the idiographic, or personal, requirements. This would obviously be the case if institutional expectations and personal needs were absolutely congruent, for the individual would always will what was mandatory, and both his adjustment and his integration would be maximized. But absolute congruence of expectations and needs is seldom, if ever, found in practice, and as a consequence there is inevitably a greater or lesser amount of strain or conflict for the individual and the institution. In the present context this strain or conflict may be defined simply as the "mutual interference of adjustive and integrative reactions." The model points to three primary sources of conflict in the administrative setting (4).

a) *Role-personality conflicts* occur as a function of discrepancies between the pattern of expectations attaching to a given role and the pattern of need-dispositions characteristic of the incumbent of the role. Recall again our example of the individual with high need-dispositions for "ascendancy" who is placed in the role of private. There is mutual interference between nomothetic expectations and idiographic dispositions, and the individual must choose whether he will fulfil individual needs or institutional requirements. If he chooses the latter, he is liable to unsatisfactory personal integration. If he chooses the former, he is liable to unsatisfactory role adjustment. In practice there is usually compromise, but, in any event, the nature of the forthcoming behavior is quite different when the expectations and the dispositions are discrepant than when they are congruent.

b) Role conflicts occur whenever a role incumbent is required to conform simultaneously to a number of expectations which are mutually exclusive, contradictory, or inconsistent, so that adjustment to one set of requirements makes adjustment to the other impossible or at least difficult. Role conflicts in this sense are situational givens and are independent of the personality of the role incumbent. They are evidence of disorganization in the nomothetic dimension and may arise in several ways:

(1) Disagreement within the referent group defining the role. For example, the principal of the school may be expected by some teachers to visit them regularly for constructive help and by others to trust them as professional personnel not in need of such supervision.

(2) Disagreement among several referent groups, each having a right to define expectations for the same role. For example, the university faculty member may be expected by his department head to emphasize teaching and service to students but by his academic dean to emphasize research and publication.

(3) Contradiction in the expectations of two or more roles which an individual is occupying at the same time. For example, a teacher may be attempting to be both a devoted mother and a successful career woman.

c) Personality conflicts occur as a function of opposing needs and dispositions within the personality of the role incumbent. The effect of such personal disequilibrium is to keep the individual at odds with the institution either because he cannot maintain a stable relation with a given role or because, in terms of his autistic reactions, he habitually misperceives the expectations placed upon him. In any case, just as role conflict is a situational given, personality conflict is an individual given and is independent of any particular institutional setting. No matter what the situation, the role is, in a sense, detached by the individual from its institutional context and function and is used by him to work out personal and private needs and dispositions, however inappropriate these may be to the goals of the social system as a whole.

In the terms of our model, these three types of conflict represent incongruence in the nomothetic and the idiographic dimensions, or in the interaction between the two dimensions of the social system under study. Such incongruence is symptomatic of administrative failure and leads to loss in individual and institutional productivity.

2. Effectiveness, efficiency, and satisfaction

A primary concern in any organization is the effectiveness, efficiency, and satisfaction of the staff (the role incumbents). The administrative problems concerned with effectiveness, efficiency, and satisfaction

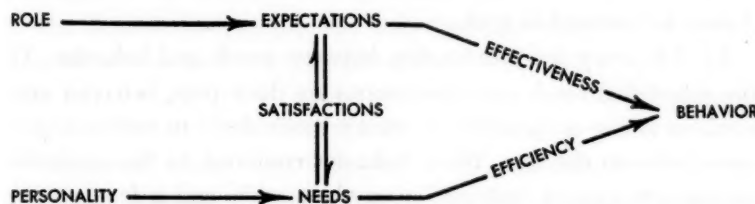


FIG. 3.—Relation of role expectations and personality needs to efficient, effective, and satisfying behavior.

faction have been confused for want of an appropriate frame of reference. The terms have often been used interchangeably, and the significant issues and fruitful distinctions that the concepts imply are obscured altogether. The model we are using makes possible clear-cut and heuristic distinctions between the terms so that a given role incumbent may, for example, be seen as effective without being efficient, and efficient without being effective, and satisfied without being either effective or efficient.

We may recall our basic formulation of behavior in the administrative situation as a function of role expectations and personality dispositions. Effectiveness, efficiency, and satisfaction may be seen as relationships among these primary elements of the model. The relationships are shown in Figure 3.

a) The criterion for *effectiveness* is typically the observed behavior of the individual being rated. However, we maintain that the standard cannot be the behavior itself but the behavior *relative* to

some expectation held by the rater for the behavior. Two crucial consequences follow from this. The first is that the same behavior may be labeled "effective" at one time and "ineffective" at another time by the same person, depending on the expectations he applies to the behavior. The second is that the same behavior may be labeled "effective" and "ineffective" simultaneously as a result of different expectations held by different referent groups. In either case, judgments of effectiveness and ineffectiveness are incapable of interpretation unless both the expectations being applied and the behavior being observed are known. In the terms of our model, effectiveness is a function of the congruence of behavior with expectations, and it must be assessed as such.

b) *Efficiency* is a relationship between needs and behavior. To the extent that needs and expectations are discrepant, behavior may conform to one or the other or, what is more likely, to some compromise between the two. When behavior conforms to the needs dimension, it appears "natural," even pleasurable, and is forthcoming with a minimum of strain or expenditure of psychic energy. In this sense, the behavior is efficient. When the behavior conforms to the expectations dimension and there is a gap between expectation and needs, behavior is "unnatural," even painful, and is forthcoming with a maximum of strain and expenditure of psychic energy. In this sense, the behavior is inefficient. In the terms of our model, we may say efficiency is a function of the congruence of behavior with need-dispositions.

c) When we consider *satisfaction* (5), we recognize that the administrator is faced with the dilemma of behaving in such a way as to produce maximal effectiveness or to produce maximal efficiency in the role incumbent. Usually he tries to maintain an appropriate balance between the alternatives. His dilemma would be resolved if the needs and the expectations could be made to coincide (selection and in-service training procedures are often directed toward just this goal). In that case, the behavior of the role incumbent would simultaneously meet situational expectations and personal needs. The re-

lation of the individual to the organization would be ideal and presumably would produce maximum satisfaction for all concerned. In the terms of our model, satisfaction is a function of the congruence of institutional expectations with individual need-dispositions.

It should be apparent that, when expectations and needs are not congruent, satisfaction is reduced below the theoretical maximum. The individual may choose to maximize his effectiveness or to maximize his efficiency without necessarily being satisfied. We may summarize by suggesting that effectiveness is situational in origin and point of assessment, that efficiency is personal in origin and point of assessment, and that satisfaction is a function of the relationship between situation and person, the three concepts being entirely independent of one another in the present analysis.

3. *Leadership-followership styles*

The terms "leader" and "follower" in the administrative situation have been variously defined, and nothing will be gained by further elaboration here. For present purposes we may say that "to lead" is to engage in an act which *initiates* a structure in interaction with others, and that "to follow" is to engage in an act which *maintains* a structure initiated by another. The terms "leader" or "superordinate" and "follower" or "subordinate" in this usage are only relative; for the follower is not altogether passive in the relationship, and the leader is by no means always dominant. The nature of the relationship depends on the operating leadership-followership styles in the particular social system.

In the terms of our model, we have identified three distinct leadership-followership styles: the nomothetic, the idiographic, and the transactional. These styles are represented pictorially in Figure 4. It should be noted that in this conception both the leader and the follower are goal-oriented, and their behavior is directed toward achieving a common institutional purpose. The three styles of leadership-followership are three *modes of achieving the same goal*; they are *not* different images of the goal. We may examine the vari-

ations in the three leadership-followership styles with respect to several major elements of our model: the proportion of role and personality factors in the behavior; the nature of the predominant conflicts recognized and handled; and the relative weight given to effectiveness, efficiency, and satisfaction.

a) *The nomothetic style* emphasizes the nomothetic dimension of behavior and accordingly places emphasis on the requirements of the institution, the role, and the expectation rather than on the requirements of the individual, the personality, and the need-disposition. In the equation $B = f(R \times P)$, P is minimized, R is maximized. It is assumed that, given the institutional purpose, appropriate procedures can be discovered, perhaps through time and motion

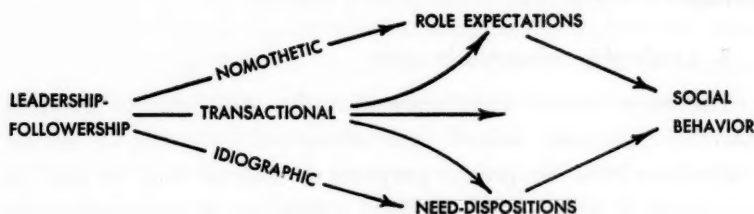


FIG. 4.—Three leadership-followership styles

studies and the like. These procedures are then incorporated in the role expectations, and every role incumbent is required to adhere, in minute detail, to the expectations. It then follows that, if roles are clearly defined and everyone is held responsible for doing what he is supposed to do, the desired outcomes would naturally ensue regardless of who the particular role incumbents might be, provided only that they have the necessary technical competence.

In short, with the nomothetic style of leadership-followership, the most expeditious route to the goal is seen as residing in the nature of the institutional structure rather than in any particular persons. The obligation of the follower is to do things "by the book"; the obligation of the leader is to "write the book." The predominant conflict that is likely to be recognized is role conflict, since this is immediately related to the institution-role-expectation dimension of

behavior. The standard of administrative excellence is institutional adjustment and effectiveness rather than individual integration and efficiency.

b) *The idiographic style* of leadership-followership emphasizes the idiographic dimension of behavior and accordingly places emphasis on the requirements of the individual, the personality, and the need-disposition rather than on the requirements of the institution, the role, and the expectation. In our equation $B = f(R \times P)$, R is minimized, P is maximized. This does not mean that the idiographic style is any less goal-oriented than is the nomothetic style; it means that the most expeditious route to the goal is seen as residing in the people involved rather than in the nature of the institutional structure. The basic assumption is that the greatest accomplishment will occur, not from enforcing adherence to rigorously defined roles, but from making it possible for each person to contribute what is most relevant and meaningful to him. This point of view is obviously related to the particular individuals who fill the roles at a particular time, and expectations must be kept vague and informal. In effect, change the individual role incumbent, and you change with him the definition of the role. Normative prescriptions of the sort included in typical role expectations are seen as unnecessarily restrictive and as a hindrance rather than a guide to productive behavior. The best government is the one that governs least, or, better, not at all. The predominant conflict that is likely to be recognized is personality conflict, since this is immediately related to the individual-personality-needs dimension of behavior. The standard of administrative excellence is individual integration and efficiency rather than institutional adjustment and effectiveness.

c) *The transactional style* of leadership-followership, as might be expected, is intermediate between the other two and is, therefore, least amenable to "pure" or even clear-cut definition. Since the goals of the social system must be carried out, it is obviously necessary to make explicit the roles and expectations required to achieve the goals. And, since the roles and expectations will be implemented by

flesh-and-blood people with needs to be met, the personalities and dispositions of these people must be taken into account. But the solution is not so simple as appears from just saying that one should hew to the middle course between expectations and needs, that is, between the nomothetic and the idiographic axes. Instead, the aim throughout is to acquire a thorough awareness of the limits and resources of both individual and institution within which administrative action may occur (that is, from the nomothetic to the idiographic extreme) and an intelligent application of the two as a particular problem may demand. In the equation $B = f(R \times P)$, P and R are maximized or minimized as the situation requires. Institutional roles are developed independently of the role incumbents, but they are adapted to the personalities of the individual incumbents. Expectations are defined as sharply as they can be but not so sharply as to prohibit appropriate behavior in terms of need-dispositions. Role conflicts, personality conflicts, and role-personality conflicts are recognized and handled. The standard of administrative excellence is individual integration and efficiency, satisfaction, and institutional adjustment and effectiveness.

4. *Morale*

Definitions of "morale," like those of "effectiveness," "efficiency," and "satisfaction," are necessarily more or less arbitrary. The model suggests one possible definition which takes into account the two elements most often identified with morale in the literature, namely, feelings of identification and belongingness, and suggests a third additional element, often overlooked, which is, however, as vital as the other two.

To understand the relevance of the model for morale, let us turn to Figure 5. We may again suppose that there exists a role incumbent subject to the expectations of his role and bringing to the role his individual pattern of needs. The goals to which the institution is directed may or may not represent the personal goals of the actor. Let us represent the terms, "expectations," "needs," and "goals," in

a triangular relationship in the same way in which "expectations," "needs," and "behavior" were previously represented. Each of these three terms may overlap the other two to a greater or lesser extent. We may attach the designation "belongingness" to the needs-expectations congruence, "rationality" to the expectations-goals congruence, and "identification" to the needs-goals congruence.

The variable *belongingness* represents the anticipation, on the part of the role incumbent, that he will be able to achieve satisfaction within the institutional framework, since it appears to him that

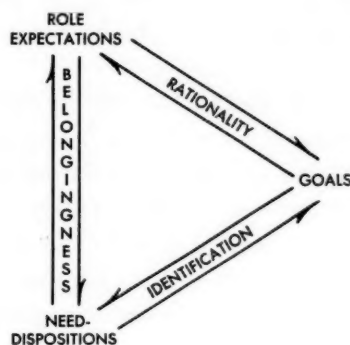


FIG. 5.—The dimensions of morale

meeting institutional expectations will also permit him to serve personal needs. Under such circumstances, as we have already observed, institutional activity is easy and natural to the subject, and he carries it out with a minimal cost in psychic energy. The energy so preserved is available for other purposes—a fact from which both the institution and the individual profit. If extra effort is required, the subject has available resources of energy upon which he can, and probably will, call.

The variable *rationality* represents the extent to which expectations placed upon a role are logically appropriate to the achievement of the proposed institutional goals. An individual may well have low morale if he sees little or no relation between what he is expected to do and what the institution as a whole is presumed to be doing.

There seems to be little point in expending even normal effort on what appear to be tangential activities; putting forth extra effort would simply be useless.

The variable *identification* represents the degree to which the subject is able to integrate the goals and actions of the institution into his own structure of needs and values. Unless the subject is able to make this integration, it appears unlikely that he will be properly motivated to carry out the enterprise functions in an expeditious and thorough fashion. It is difficult to imagine how high morale, in the sense of a predisposition to put forth extra effort in the furtherance of group goals, might be maintained under such circumstances.

In terms of the model, then, morale may be understood as resulting from the interaction of three factors: belongingness, rationality, and identification. Morale cannot be high if even one of these factors is zero; morale can, however, reach acceptable levels if all three factors are maintained to some degree. In this sense, then, the task of the administrator seeking to develop high morale is the maintenance of reasonable levels of agreement among expectations, needs, and goals.

In conclusion, we wish to disown any implication that the improvement of administrative practice will automatically ensue from a knowledge or manipulation of concepts and variables of the sort proposed in this model. This would be like saying that the success of a medical practitioner depends solely on his knowledge of medical science—physiology, biochemistry, and such. On the other hand, there is little doubt that these are of no small value in successful medical practice. Similarly, the application of systematic concepts from social science to a real situation will help the administrator to sort out the problems confronting him, to examine them in appropriate contexts, and to understand something of their internal dynamics. Such formulations, though they may not provide generalized decisions for action, and at this time are perhaps of greater

research value than applied value, may at least make it possible for the administrator to understand why certain decisions and practices work while others do not (6). There seems to us, in short, little doubt of the heuristic value of such models.

NOTES

1. Our indebtedness to the work of Talcott Parsons will be self-evident throughout this and subsequent sections of the paper. See also J. W. Getzels, "A Psycho-sociological Framework for the Study of Educational Administration," *Harvard Educational Review*, XXII (Fall, 1952), 235-46.

2. Ralph Linton, *The Study of Man*. New York: D. Appleton-Century Co., 1936.

3. Talcott Parsons and Edward A. Shils, *Toward a General Theory of Action*. Cambridge, Massachusetts: Harvard University Press, 1951.

4. For some attempts at research in this area, see: (a) Samuel A. Stouffer and Jackson Toby, "Role Conflict and Personality," *American Journal of Sociology*, LVI (March, 1951), 395-406; (b) J. W. Getzels and E. G. Guba, "Role, Role Conflict, and Effectiveness: An Empirical Study," *American Sociological Review*, XIX (April, 1954), 164-75; (c) J. W. Getzels and E. G. Guba, "The Structure of Roles and Role Conflict in the Teaching Situation," *Journal of Educational Sociology*, XXIX (September, 1955), 30-40.

5. The term "satisfaction," as it is used here, is more or less synonymous with "contentment" and should not be taken to include such additional concepts as fundamental agreement with institutional objectives or the feeling that the institutional environment lives up to the incumbent's standards of technical or professional adequacy. These concepts involve certain additional factors, as, for example, the level of aspiration of the incumbent, which are too complex to be handled here.

6. The relation of theory, research, and practice in administration generally has been discussed by J. D. Thompson, "On Building an Administrative Science," *Administrative Science Quarterly*, I (June, 1956), 102-11; and in educational administration specifically by A. P. Coladarci and J. W. Getzels, *The Use of Theory in Educational Administration*. Monograph No. 5. Stanford, California: School of Education, Stanford University, 1956.

Other-directed and Inner-directed Teachers Look at Education

Modern, urban, middle-class society has been characterized by Riesman as other-directed (1, 2). In an other-directed society, he observes, people tend to look to one another as a source of values. In contrast, in an inner-directed society, people rely upon highly internalized values as guides to action. Much that distinguishes our society from that of fifty or a hundred years ago may be explained in these terms.

Since educators come largely from the middle class, it is to be expected that some of the current educational thought and practice will be tied up with the trend toward other-direction; in particular that other-direction will have an influence on what teachers see as the purposes and methods of education and on teachers' relations with pupils, parents, and colleagues. As part of a study aimed at exploring some of these influences, a group of approximately seventy-five teachers were asked recently to respond to an anonymous, semi-projective questionnaire dealing with educational issues.

The forty-five completed questionnaires were sorted, on the basis of an over-all rating, into four categories:

1. *The extremely other-directed person* was one for whom other-direction was so pervasive that nearly every action was seen in terms of how others felt about it. He would continually set up the criteria for making a decision, describing the techniques one might use to sound out the feeling of the group. His answers were tinged with anxiety about acceptance, being liked, and reducing interpersonal conflict.

2. *The adjusted, other-directed person* (or, as we shall call him, the "adjusted person") was one who was adept at satisfying his other-directed drives to be

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accepted and liked. His success in general allowed him to tolerate occasional rejection, and he was acutely aware of when agreement with the group mattered and when it did not.

3. *The inner-directed person* was distinguished by his marked tendency to judge an issue on the basis of unquestioned values and to come to his conclusions in terms of a rigid conception of the teaching profession. Unfortunately for the purposes of the study, persons in this category were in less contrast with those in the fourth category than they might have been. In a predominantly other-directed milieu the inner-directed person is an irritant, and his survival depends upon his being sensitive and open-minded.

4. *The autonomous person* was inner-directed or other-directed, or both, but he was sufficiently independent of his internalized values and his associates' opinions to pursue ideas with a degree of intellectual independence not available to his colleagues.

These categories were not mutually exclusive nor absolutely delineated. At most, the autonomous person was only somewhat more autonomous than his colleagues; the other-directed person relied on internalized values only somewhat less than did the inner-directed person; and the inner-directed person heard and responded to the opinions of those around him.

After the questionnaires were sorted, they were reread, question by question and category by category. From each category a response was chosen which most clearly represented the typical response in that category. It was an average response to the extent that no atypical response was chosen, but, to the extent that the most revealing response was chosen, it was not average. The aim in selection was to show as clearly as possible, with verbatim data, how an ideal member of the category would look to these respondents.

Not all the original questions are discussed in this paper, and the order in which they are considered is different from that in which the teachers responded to them. Furthermore, the responses quoted for a given category are not those of a single individual. With these limitations in mind, we shall look at the first two questions and the responses representative of those given by teachers in the four categories.

1. *Admittedly, good teaching is very hard to pin down in a description, but if you were to pick out the essential qualities of a good teacher, what would they be?*

Extremely other directed.—To really love children, to have a deep abiding faith, hope, respect, and admiration for them. To be a well-adjusted personality. To be interested in education, learning, and its needs and problems. To be alert, ready to adjust to the needs of the children, the school, and the community.

Adjusted.—A genuine liking for people and acceptance of them; an alert inquiring mind, intellectual curiosity, many interests, and a broad background of varied experience; inner security (no need to prove himself to anybody); a warm and friendly smile, good grooming, a sense of humor, an attractive appearance, and an understanding of children.

Inner-directed.—Extensive knowledge of his field and the ability to communicate this knowledge in an interesting fashion; the ability to command respect from the students, by being fair.

Autonomous.—A liking for and interest in children; a knowledge of subject matter and an interest in it above and beyond what is necessary to teach it in the narrow sense of the word; common sense, adaptability; a desire to teach in the sense of having a need to explain or show things to those who don't know them.

2. *Imagine, in each of the cases below, that here is a description of a practice teacher whom you are trying to help become a good teacher. What would the gist of your advice to him be (recognizing that advice can often be given only in a tacit, indirect way)?*

a) *A person who is very warm and easygoing, whom the children accept spontaneously.*

Extremely other-directed.—Your warmth and ability to relax are good. It is necessary to couple this with an ability to be firm in your expectations of the children. The children want and need limits, and they want you to set them.

Adjusted.—I do not believe *real* acceptance is "spontaneous" in children or adults. It is built and carefully guarded if durable. However a teacher who is liked and finally accepted should take advantage of his position by teaching madly, because he can induce more learning when he is accepted than under any other circumstances. He actually has a greater responsibility toward the children than any other teacher would have.

Inner-directed.—Affection is important, but respect and a good standard of required work are more important.

Autonomous.—Popularity and a lack of conflict are not to be mistaken for results.

b) *A person who is very exacting, who is never satisfied with anything short of a perfect piece of work.*

Extremely other-directed.—Commend his high standards but suggest that children differ. Urge more study of child growth and development. Point out that middle-of-the-road is perhaps best for children. Too strict is as harmful as too lax.

Adjusted.—Give up teaching or go into therapy. This personality would be miserable in the profession and would make students equally so.

Inner-directed.—We are trying to teach individuals as much as they are capable of learning, not to create perfection. Encouragement of effort is very important.

Autonomous.—The practice teacher should examine his objectives in teaching. I would advise him to do so, and, if his objective is perfection in rote learning, I should heartily disagree with him.

c) *A person who is very absorbed in the subject he teaches, who shows little interest in anything else.*

Extremely other-directed.—Remember you are trying to help the child to discover new things. Think of how the children think about it. Such a person is probably in the wrong field of work.

Adjusted.—Try to get him to think about broad educational objectives and how they apply at the level at which he is teaching. Also try to show him that teaching is partly promoting interest in the subject taught and that, human nature being as it is, students are usually more willing to become interested in your subject if you can show intelligent interest in things in which they are interested.

Inner-directed.—Often the practice teacher needs to do this to be successful; many subjects need this if they are to be done well.

Autonomous.—A school is more than subject matter, and each area of subject matter reinforces the other. An educated person is more than a specialist in a particular field.

d) *A person who is highly competitive, who pits the students against one another, who encourages each student to become a winner.*

Extremely other-directed.—School is an attempt at group living, and pitting the children against one another in an overly competitive atmosphere will render effective group endeavors impossible.

Adjusted.—By example show your own interests; engage him in conversation. Show the richness of a class period in which related ideas are brought in.

Inner-directed.—The purpose of education is to give each student as much as he is capable of handling and not to penalize the less effective student; education is not a contest.

Autonomous.—The progress of a student should be at least partially measured by some absolute standard. Such a situation will pose serious problems for the less capable students. The lack of motivation will soon be shown by the students who give up the race.

These responses give a fairly clear picture of the effective teacher as four kinds of persons see him. The effective teacher, according to the inner-directed people, is one who knows his subject and is skillful at presenting it. He is demanding of both himself and his students, occasionally to the point of excluding all other interests. He rejects the spelling-bee kind of motivation of the old school, but he still wants to teach the child all he is capable of handling. He knows

what is worth teaching and considers part of his job to be the creation of interest in what he teaches. Warmth and affection are, if anything, potential sources of weakness.

An opposite picture of the effective teacher is drawn by the extremely other-directed person. This person loves children, and his dependence upon their reaction to him pervades his thinking. He is firm because the children want firmness. He doubtless wants it, too, but he would have some misgivings about being firm if the children did not want it. He is alert to the needs of the children, the school, and the community. Even the perfectionist, whom all the others take to task, is praised. The other-directed person finds it difficult to condemn anyone categorically; he is committed to finding some good in everyone, to displaying an interest whether he has it or not. Even education and learning get the "glad hand"; the good teacher is instructed to be interested in them much as the modern girl is instructed to be interested in what her boy friend talks about. The end of teaching is some kind of satisfactory relationship with the children, with the staff, with the parents, or with anyone else involved. Whatever contributes to this relationship is good; whatever interferes, being too strict or being competitive, for example, is undesirable.

The adjusted person, too, is willing to work hard to win the affection of the class. So valuable is this affection that the teacher who has won it has heard the call of greatness. Affection for him is more a means and less an end than for the extremely other-directed teacher; perhaps because he is more successful at winning it. In fact, it is the very success with which the adjusted person works that distinguishes his approach to education. He has no need to prove himself; he need only be attractive, out-going, and friendly. He would avoid, or eliminate through therapy, the drives which, for the inner-directed teacher, get the job done or which, for the autonomous teacher, lead him into teaching as a way of life.

The autonomous teacher is distinguished, in part, by the range of considerations that appear in his responses. He is introspective enough to recognize that teaching satisfies a need within him. He is

skeptical enough to question the value of a conflict-free situation and the nature of learning in a highly competitive situation. His answers are not necessarily correct, but they go beyond the impersonal conception of education held by the inner-directed teacher and beyond the ultra-personal conception held by the other-directed teacher. The autonomous teacher is in a position to move ahead in developing a philosophy and a practice of education, as the others are not.

The next two questions deal with the educator's professional relation to the people whom he serves.

3. *An irate citizen wrote the president of a state university recently to complain that one of the books used in a Freshman English course was immoral and licentious. Please state briefly what action should have been taken and by whom.*

Extremely other-directed.—The president should write to the citizen showing his interest in the charges and asking for further instances of immoral or licentious passages. In this way he would set up a two-way communication which would give the citizen recognition and at the same time find the basis for the accusation. The matter might be cleared up with no feelings hurt and a good public relations act set up.

Adjusted.—Action might not be taken at all if there were only one letter. However, if action were decided upon, a letter should be submitted by the person or persons responsible for prescribing the reading to the president. Objectives met by the book in relation to the course should be set down. If the president feels that the letter is representative of the university's stand in the matter, it should be sent to the citizen and forgotten. If there is justification in the complaint, it should be apparent to the people of the university in the process of answering the complaint.

Inner-directed.—If the English teacher could spare the time, I would suggest that, with the backing of the president, he should write and explain why and how the book was being used.

Autonomous.—The head of the English department should see the citizen, if possible, and present to him the right of authors to portray all aspects of life and the right of the university to help students understand all types of literature. If seeing directly is impossible, a letter must try to do the job.

4. *Since teachers are professionals, they alone have the knowledge and experience to decide many educational issues wisely. On the other hand, the schools are responsible to the community and to the parents. If there really is a conflict—say, about the way the schools teach spelling—how should the matter be decided?*

Extremely other-directed.—Parents in such a situation may not be welcome in the school either for visiting or for conferences, and this calls for consistent effort on the part of the school to bring the parents into the school where they may see

and learn about the methods being used. Then the results may be used to compare differing methods.

Adjusted.—Most durable solutions to problems in a democracy must be worked out by all parties to a dispute. This takes time, study, patience, and understanding of the basic causes of conflict. In most communities where these problems arise, the majority of parents (often silent) will support the school if it is wise, reasonable, and shows practical results in educating the community's youth. The out-spoken minority is sometimes best answered, and then forgotten. If a majority of parents are in conflict with the school, there is reason to doubt the position of the school, and a thorough study of the situation should be made by both parents and educators until a compromise is reached. Parents are usually pretty responsible educators too.

Inner-directed.—We live in an age that stands in considerable awe of specialist authority in many fields, but "everyone" knows how to raise and teach children. Teachers' authority should stand, but rationale for particular mode of teaching might be explained to parents; parent pressure might be valuable in causing a reassessment of results.

Autonomous.—The assumption must be that the teachers are competent and have the right to teach as they see fit. However, pressure cannot be disregarded entirely since there is always the possibility that it may have some justification. The matter should be reviewed by the administration advised perhaps by a group of impartial scholars in the area of conflict. The administration should make the final decision based on the theory that the burden of proof is with the parents. If the decision of the administration seems unfair to the teacher he should protest by resigning.

In Questions 3 and 4 the respondents are presented with situations already full of conflict. All the other-directed respondents have faith that these conflicts can be resolved. The extremely other-directed person feigns interest in the irate citizen's charges and attempts to flatter him by giving recognition to what he says. He is looking for a way to open up communication between the accuser and the accused in the hope that the problem will disappear and no one will have his feelings hurt. Indeed he hopes for more than this: he hopes to turn the enemy into a friend.

Where the concern is with avoiding dissension, as it is in the extremely other-directed person's response to Question 4, the real issue (the extent of the teacher's autonomy) may be overlooked, for his answer tells how a conflict of this sort may be kept from occurring. The autonomous person's answer points this up very well. For him the conflict is evidence that the curriculum may be faulty, but,

for the extremely other-directed person, the trouble lies in the school's failure to extend a friendly hand.

The adjusted person is willing to settle for less than complete harmony. So long as only one citizen raises his voice, he can be ignored with impunity. When action is expedient, however, the course is clear: the person responsible for the choice defends it. This straightforward, workable approach is much less elaborate and more courageous than that which frequently showed up among adjusted persons' responses. Numbers of these people suggested setting up committees of faculty and lay citizens to decide the issue. The reply quoted was chosen because it points up the kind of discrimination made by the adjusted person in deciding which pressures to respond to and which to ignore. It also points up a typical other-directed belief that there are no differences of opinion which cannot be resolved if the facts are examined.

Faith in the ultimate resolution of conflict is also evident in the adjusted person's reply to Question 4. The danger in this position is that, if the parents or the citizen is right, the teacher must be wrong. The right to be wrong—the right to be anything except what a majority of the people involved think is right—is emotionally, if not logically, denied by the reply of the adjusted person. He cannot, as the autonomous person recommends, protest by resigning; for he is committed to the belief that conflicts are resolvable and that everyone has the same rank.

It was necessary to go to the inner-directed group to find a respondent who thought the citizen in Question 3 should mind his own business, and only one respondent in this category stated flatly that the university alone had the responsibility for choosing subject matter. Other inner-directed respondents tended to assume, as did the person whose response is quoted here, that the choice had been a wise one but that the citizen deserved an answer. The assumptions that the book had been chosen competently and, in Question 4, that the parents must be wrong is consistent with the inner-directed teacher's belief that he knows what is worth teaching and how to teach it.

The autonomous replies quoted here are typical of the militance that teachers in the autonomous group showed in dealing with these questions. Unlike the inner-directed person, who stands his ground on the book issue politely but without showing much concern for the issue of academic freedom, the autonomous person finds it a fighting matter. His very autonomy is threatened by the citizen who can have a voice in the choice of learning materials. What for the citizen is immoral, is for the autonomous person an aspect of life, an area of possible inquiry. The inner-directed and the other-directed teachers are alike in their willingness to eliminate immoral reading materials, though unlike in their methods of determining what is immoral. The autonomous person differs from them both in wanting to be free to keep the matter open.

If the autonomous persons' answers are the better ones, they are better in that they are the expressions of persons who are not likely to treat their professional responsibilities lightly. Their position may result in a battle, but if public action is unopposed save by people who concede to the majority opinion, the freedom of the school to operate in a considered and potentially valuable way is limited to what it can explain to the layman.

In Question 5 the teacher is presented with a variety of threats.

5. *When a teacher takes a new position, he will occasionally find himself in one of the following uncomfortable situations. What, in your opinion, should a teacher do in each of these cases?*

a) *Called in to explain why his class has done very badly on the school-wide achievement tests.*

Extremely other-directed.—Listen carefully to the administrator, and remember that he is doing this because some pressure is being put on him. Try to be understanding, and then quietly state your own position.

Adjusted.—Give straightforward answers; find out how important this battery of tests is to the powers that be. He should then seek advice in talking to some department member whom he respects.

Inner-directed.—A new teacher could not be responsible in a case like this.

Autonomous.—Explain his program and determine whether his objectives are similar to the school's. If they are, he needs help to improve; if they are not, he needs to find a new job for the coming year.

There is, of course, no satisfactory answer to this question. The teacher is asked to accept responsibility after the harm has been done. The other-directed person's response shows his inability to tolerate hostility. The administrator is not incensed with a person who has done a poor job; he is under pressure. The adjusted person's response reflects his candor, his willingness to bare his soul. He hides nothing from the administrator, and he talks over his problem with a colleague. The inner-directed person avoids the dilemma by a liberal reading of the question. The teacher is new and has not achieved professional status. The autonomous person's response is in sharp contrast with that of either the other-directed or the adjusted person; he recognizes the possibility that the teacher and the school may have different purposes and that the teacher's purposes may be sufficiently important to him that he will move on to a more sympathetic school. The adjusted person has his ear to the ground for purposes, and the implication is that he will adjust his teaching to them.

b) *Faced with a class that thinks that showing any interest in schoolwork is a sign of effeminacy or pedantry.*

Extremely other-directed.—Try to find the thing in which a majority is interested and build slowly into other things from there. Once a teacher has the confidence of the group, he is on his way.

Adjusted.—Try to identify a few students who are influential, discover their interests, and if possible show that what is taught has some bearing on their interests. Perhaps one could have them help plan a unit showing such relationship.

Inner-directed.—Bring in some he-men interested in the subject to inspire the boys.

Autonomous.—Make sure that he himself does not sin in the direction of effeminacy or pedantry. Illustrate his case with examples of people who are both human and virile as well as educated.

What can the teacher do when the values of the children are antagonistic to education in his terms? Both the extremely other-directed and the adjusted teachers recommend starting with a concession to the students' interests and, having achieved the confidence of the group by showing interest in their interests, moving the group

in the direction he wants it to go. The adjusted teacher, aware that it is easier to bring a few students around than many, advises operating through a few influential students. Both the inner-directed and the autonomous teacher attack the problem directly by producing a he-man model to give the children physical evidence that virility and education are compatible. The inner-directed teacher, unable to deny his beliefs, will probably go on bucking the attitudes of the class and achieving, at most, a partial success. On the other hand, the other-directed teachers will probably have to make continual concessions to their classes and will never quite make the transition from the students' interests to what the teacher feels is worthwhile.

c) *Looked down upon by the parents.*

Extremely other-directed.—What kind of parents? Get to know them better: P.T.A., conferences, etc. Emphasize your joint interest in the welfare of their child.

Adjusted.—Depends on why they "look down" on you. If for incompetence, try to improve so the grounds will be removed. If for lack of conformity to social customs of the group, try to conform in unimportant matters so you can do as you wish in ways which really matter.

Inner-directed.—Forget it. Go about his work. If he loves his work, he can forget that. He may turn out to be looked up to.

Autonomous.—Why? If he is not good at his job, sensible parents will look down on him. If it's only that he makes little money, or lives simply, or cares about non-material things, it doesn't matter.

Being accepted by those with whom he works, including parents, is a necessary condition of work for the other-directed person. If acceptance is denied him, he cannot retreat to some inner evaluation of himself. Instead, he is drawn to the very people who reject him, convinced that to be known is to be respected and liked. And, lacking acceptance in his own right, he asks for it for the sake of the children. The adjusted teacher takes a more aggressive position. He becomes, first, competent and, second, the operator. He feigns co-operation through acquiescence in trivial matters in the hope of establishing the good will that will allow him to go his own way in important matters.

The inner-directed teacher has a retreat—his work. He seeks parental respect, however; for in the next breath he quotes the mouse-

trap philosophy of success. The adjusted person, too, values competence but is aware that teachers are judged on more than competence. The autonomous person, like the inner-directed person, says it does not matter, but he is really reminding himself that, if the rejection is for reasons he himself does not think important, it ought not to matter.

d) *Disliked by the other teachers.*

Extremely other-directed.—He should make a greater effort to be compatible. Schisms in the faculty can have a demoralizing effect on the morale of the whole school. Be diplomatic in expressing differences.

Adjusted.—Try to be friendly and put yourself out a little for them. They may feel you are being standoffish. You have to make an effort to get along; they aren't going to do all of it.

Inner-directed.—Change schools.

Often jealousy. Go about his job. May be superior to others.

Autonomous.—Why is it? Is it for a valid position he's taken on some issue? Then he must keep on interpreting his stand. If he is a person hard to like for any number of basic defects in personality, he'd better get a job less dependent on the confidence of his colleagues.

A cardinal belief of the other-directed person is that he can make other people like him if he works at it. Unfortunately his efforts at compatibility may, as the extremely other-directed person indicates, consist in suppressing differences of opinion and in avoiding schisms. The adjusted person, on the other hand, will take cognizance of the needs of his colleagues without necessarily compromising his opinions. The inner-directed person is both less disturbed by being disliked and less inclined to believe he can do something about it than is the other-directed teacher. The autonomous person's position is to some extent an intermediate one. If his being disliked is due to a stand he has taken, he is under a moral obligation to stick it out. If his personality is at fault, he had better move, not on, but out.

It is interesting to observe the comments on the sources of dislike. The adjusted person cites the possibility that others may think he does not like them. The inner-directed person cites professional jealousy.

e) *Disliked by the students.*

Extremely other-directed.—He should look objectively at himself. He should

seek the counsel of someone he respects and study carefully what motivates his interaction with the students—if anything. Some rather basic changes in the teacher's attitude are probably called for.

Adjusted.—Question yourself as to why. Don't "kill" yourself to be liked by students, but try and change if you think it necessary. If nothing seems to work, speak to other staff members—honestly asking what they think is wrong. If nothing seems to work, don't froth at the mouth—next year there will be a new bunch of kids.

Inner-directed.—If a teacher is disliked by all students year after year, he should move to another school. If it keeps up, he should go out of teaching.

Autonomous.—Does he also dislike them? Then he had better leave teaching. If, however, he likes kids, he ought to look at himself and ask others for their opinion on the basis for the dislike. Then he can try to change. Unless it's real and enduring antagonism, he need not give up. A teacher need not be loved to be useful.

In the eyes of these respondents, the day has passed when the teacher who teaches the student through frightening or irritating him can be considered an effective teacher. Such a person is going to have to undergo some basic changes in attitude, according to the extremely other-directed teacher. It is not surprising that he feels that being disliked is a real barrier to good teaching. What is surprising is his faith that a person can alter his attitudes at will.

The adjusted person also wants to be liked. He is even willing to attempt to change himself, but not to the extent of "killing" himself. Furthermore, he feels that the students are partly responsible, that with a "new bunch of kinds" he can do better. The inner-directed teacher also blames the students, and his course of action is to look for new ones. If it turns out that the fault lies within himself, he will try another profession. It does not occur to him that it is possible to change the situation by improving his likability or by making some concessions to the students.

Similarly the autonomous person feels that the teacher should leave the profession rather than attempt to acquire a liking for children. But, if he likes them, he can find out why the students dislike him and can change accordingly. On second thought, however, he finds this view extreme. He ends with the caution that the usefulness of a teacher rather than the degree to which he is liked is the measure of his teaching.

The persons who emerge from these data are, of course, hypothetical. A single questionnaire, even that of a person who falls clearly into one of the categories, presents contradictory responses that seem to make the categorization worthless. Whatever value the categorization may have lies not in the stereotyping of individuals but rather in the insight given into the forces with which the individual must work.

The picture of the extremely other-directed teacher is, in some respects, disconcerting. What might be highly desirable in his orientation—his compassion, his concern with satisfying interpersonal relations—is often weakened by his very concern with them. He is not, as he hopes to be, a real co-operator; for his preoccupation with being liked keeps him from participating in the give-and-take that co-operation requires. Similarly, he often falls short of really liking, and being liked by, people, for he is uncomfortably anxious in their presence. By being too sensitive to the needs of the children, he may be led into the neglect of his official duties as a teacher. By being too responsive to the children's reactions to him, he may transmit to them some of his own anxiety.

The adjusted person is certainly a more successful, if not a happier, person than is the extremely other-directed individual. The former's ability to acknowledge and to tolerate a degree of social failure makes success the more likely. He often achieves real autonomy by virtue of the skill with which he moves among his fellows. The pitfall for this person is that his success in getting along with people may make getting along with them an end in itself. He may lose the ability to be unpopular, to perceive an end that requires him to deny that which he can do so well. As an educator, he may respond to forces of ignorance because they are forces; he may have to take into account, not only what he does not know, but also what others do not know.

The way toward autonomy is certainly not obvious. Autonomy is something the individual must define for himself, and therefore it has many possible forms. While the pictures of the other-directed and the inner-directed teachers grow with some consistency as one

progresses through the questionnaires, the picture of the autonomous teacher does not. The hope of any person lies in the contradictions within him. Insofar as he can recognize the goals that he seeks, it is the potential for achieving a variety of goals—as indicated in this study by the inconsistent variety in the autonomous person's responses—that enables him to be something other than an inner-directed or other-directed type. He is not likely to lose his inner-directed or other-directed tendencies, but, if he can achieve an awareness of them for what they are, he can also become, in some degree, independent of them.

In many ways the tendency of the other-directed person to rely upon the group is easily confused with a tendency toward democratic action. The difference is that democratic action is a creative process in which an issue is decided on the merits of the ideas involved, whereas other-directed dependence upon what others think is a stifling process in which the basis of the decision is emotional. Other-direction is opposed to creativeness insofar as it inhibits the freedom to have, to express, and to discuss a potentially unpopular idea. Its achievement is intellectual conformity, often unwilling and resentful, as opposed to a temporary working agreement or possibly no agreement at all.

The other-directed person is highly motivated to work in concert with his society. It is ironic that the motivation that makes him potentially useful can also make him ineffectual. As with the individual, the hope of society lies not in the elimination of inner-direction and other-direction but in setting up the conditions, possibly through the recognition that the individual needs protection from the group, that make autonomy possible.

NOTES

1. David Riesman, *The Lonely Crowd*. New Haven, Connecticut: Yale University Press, 1950.

2. David Riesman, *Faces in the Crowd*. New Haven, Connecticut: Yale University Press, 1952.

UICSM PROJECT STAFF

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The University of Illinois School Mathematics Program

The Project for the Improvement of School Mathematics of the University of Illinois Committee on School Mathematics was started at the University of Illinois in 1951. It was a joint venture of the College of Education, the College of Engineering, and the Mathematics Department.

The UICSM developed a high-school Freshman course which was taught in one class at University High School in the academic year 1952-53. The result of the year's experience was encouraging enough to suggest that the UICSM program be extended to several public schools for experimental trial. Two Illinois public schools entered the UICSM program in the fall of 1953. In September, 1957, more than seventeen hundred students in twelve schools in Illinois, Missouri, and Massachusetts were enrolled in UICSM courses.

The curriculum makers of the project asked questions such as the following: "What is a number?" "What is a variable?" "What is a function?" "What is an equation?" "What is geometry?" None of these questions is treated satisfactorily in conventional textbooks, nor does a mere integration of traditional content give answers. The staff felt that, unless such questions could be answered in a con-

The staff of the University of Illinois Committee on School Mathematics, Project for the Improvement of School Mathematics, is made up of the following members: Max Beberman, W. T. Hale, Gertrude Hendrix, D. A. Page, H. E. Vaughan, and others. The ideas expressed in this article are to a large extent derived from textbooks, teacher commentaries, and teaching programs of the project. The work described in this article and the other work of the project have been made possible by a grant from the Carnegie Corporation of New York.

sistent fashion, high-school mathematics would remain disjointed and mysterious.

The first thesis of the UICSM is that a consistent exposition of high-school mathematics must be found. The charge that the traditional high-school curriculum in mathematics is riddled with inconsistencies can be easily documented. But, if conventional programs supply confusing explanations of basic concepts, how can we explain the fact that some high-school graduates are well grounded in mathematics? Despite what children are actually told in the classroom, they tend to organize their mathematical knowledge in ways which are meaningful to them. Children observe teachers solving problems at the blackboard, and they imitate their teachers. However, not all problems can be solved through imitation. There is not enough time for teachers to demonstrate solutions of all types of problems. Therefore the student makes an attempt to systematize his knowledge of mathematics and use this knowledge to solve new problems. Sometimes his textbooks attempt to assist him in this systematization. But textbook statements are so often full of confusion that a literal acceptance of them cannot help but confuse a child. The student who is interested in mathematics tends to learn mathematics almost in spite of teacher and textbook!

Other students quickly detect inconsistencies in the explanations supplied by textbooks and teachers and decide that "math is silly" or that "there is the math teacher's way of solving a problem and there is the common-sense way of solving it." Such students often give up mathematics at an early age and move into areas which are more intellectually satisfying to them.

The UICSM maintains a second thesis: high-school students have a profound interest in *ideas*. High-school students are speculative; they enjoy working with abstractions; they like to exercise their imaginations. Despite the current fashion of pointing out the usefulness of mathematics in various occupations, most high-school students are not genuinely stirred by such a "sales campaign." The goal of vocational utility is too remote to make much difference to a ninth-grader. He wants to know how mathematics fits into his own

world. And, happily, his world is full of fancy and abstractions. Thus students become interested in mathematics because it gives them quick access to a kind of intellectual adventure which is enticing and satisfying. For example, a student's study of quadratic equations is not made more interesting by telling him that engineers make considerable use of such equations in their work. A student is interested in what a quadratic equation is; how such an equation is solved; whether some are easy to solve and some are hard to solve; whether some, perhaps, cannot be solved; and how quadratic equations fit in with the rest of his knowledge of mathematics.

The third thesis of the UICSM is that manipulative tasks should be used primarily to cast light on basic concepts. This idea provokes considerable opposition from some teachers of mathematics, who believe that the most effective curriculum for the high-school student is one which is heavy laden with manipulative tasks. They feel that the period of adolescence is the best time in which to give students practice in carrying out routine mathematical manipulation. Although there is need for dexterity in carrying out routine tasks, a curriculum which is based primarily on such tasks is not attractive to high-school youth. To be sure, manipulative tasks *can* be designed to develop certain kinds of cleverness, and many good mathematicians had their early contact with mathematics in just such a curriculum. However, the creative urge of the adolescent does not find satisfaction in such a curriculum. Moreover, the mathematics teacher who is truly interested in mathematical ideas can hardly be content with becoming a "drill sergeant." If, in teaching the solution of systems of equations, a choice must be made between teaching what it means to solve a system of linear equations and teaching rote methods for solving *both* systems of linear equations and systems of quadratic equations, the choice the UICSM would make is clear. A student who *understands* the solution of systems of linear equations can often create his own methods for solving systems of quadratic equations. A student who has been exposed to a diet rich in ideas is more resourceful than one who has been exposed principally to manipulative tasks.

In the attempt to develop a curriculum in accord with the aforementioned theses, the UICSM has introduced ideas from modern mathematics into its high-school curriculum. However, the project staff is more concerned with consistency than with up-to-dateness. In trying to tell a consistent mathematical story, advice was needed from contemporary research mathematicians, particularly from mathematicians who are concerned with logic and the foundations of mathematics. Consequently, in the academic year 1954-55 the UICSM developed teaching units which dealt with theoretical treatments of the natural number system, the system of integers, the rational number system, and a Hilbert-like version of plane geometry. Although these units did not meet with unqualified success in all the schools participating in the program, the experience gained through the trial led to the following conclusions:

1. Contemporary mathematics (material of interest to research mathematicians within the last hundred years) contains much that can be both interesting and valuable to high-school students.
2. High-school teachers of mathematics, although receptive to these new ideas and eager to incorporate them in their teaching, are not prepared academically to teach concepts from contemporary mathematics. However, the teachers are capable of doing so when they are given appropriate help both in understanding these ideas and in teaching them.

At this point it is appropriate to present in outline form the content of the four-year curriculum as it is now (in the fall of 1957) conceived by the UICSM and to indicate briefly how these new courses relate to the previous discussion. Listed below are the major topics in the four courses as they are now being taught.

First Course

Distinction between numbers and their numerals.

Principles of arithmetic (commutative, associative, etc.).

Positive and negative numbers.

Relations of inequality (\neq , $<$, $>$).

Variables ("pronumerals"; we sedulously avoid such confusing terms as "variable number" and "general number").

Generalizations about numbers (Example: For every x and y ,

$$|x + y| \leq |x| + |y|).$$

Equations and inequalities, and their loci.

[In the "First Course," students learn the nature of the language of mathematics. They recognize that the symbols they write on paper are not part of the basic content of mathematics but that they help in dealing with the abstractions which are the content. In particular, the students know what variables are and how they are used in mathematics to state generalizations. They know what an equation is and what it means to solve one. They understand the connection between an equation and the picture obtained when an equation is "graphed."]

Second Course

Euclidean geometry.

[Postulates which form an adequate basis for a rigorous development of Euclidean geometry are obtained by abstraction from the number plane. This involves considerable work with ordered pairs of real numbers, linear equations, parametric equations of lines, etc. Geometric objects (lines, angles, triangles, etc.) are taken to be sets of points, and much use is made of elementary set-theory, including the set-theoretic notion of relations. The idea of a deductive theory is brought out by considering numerous models of subsets of the fifteen postulates. The principal theorems of elementary Euclidean geometry are deduced from the postulates. The existence of co-ordinate systems is established, thus proving the adequacy of the postulate system as well as providing a rigorous basis for the analytic treatment of geometry.]

Third and Fourth Courses

Mathematical induction (generalizations, hereditary properties, recursive definitions, progressions, Σ -notation).

Exponents and logarithms (recursive definitions of exponentials, induction proofs of laws of exponents, rational and real number exponents, exponential curves, logarithms as exponents, natural logarithms, the binomial theorem).

Complex numbers (ordered pairs of real numbers, field properties, applications to plane geometry).

Functions (integral rational functions, polynomial equations, derivatives, Newton's method).

Circular functions (winding functions, periodic functions, even and odd functions, cosine and sine and related functions, trigonometry, subtraction formulas, inverses of circular functions, "trigonometric" equations, limit law for sine, loci of composite circular functions).

[In these courses the student learns much of the content of traditional advanced high-school mathematics courses from a new and broader point of view. He can solve traditional problems, and he can do much more.]

It should be remarked that the UICSM curriculum has always been in a somewhat fluid state and that it is expected to remain so

for some time. Both major and minor changes in the curriculum are suggested by the classroom experiences of the teachers who are co-operating with the project and by the insights into the structure of elementary mathematics which come to the writing staff as they attempt to solve problems of exposition. For example, the present ninth-grade course ("First Course") is now in its fourth issue, and a comparison with the first issue will reveal scant similarity between the two. Since really radical experiments in the construction of mathematics curriculums have been few in number, there are almost no precedents other than those created by the UICSM itself.

As is implicit in the foregoing discussion, members of the project staff have strong beliefs about how students learn mathematics. The most carefully devised curriculum can be vitiated if teachers utilize inappropriate techniques.

Students can perceive their mathematics courses in much the same light as they perceive good courses in art and in literature. Just as a skilled teacher of literature leaves students with the belief that literature is a living subject and that they can contribute to it, so does a good teacher of mathematics foster in his students the belief that the developments of mathematics is a human activity which is not complete and to which each person can make contributions. Such a belief is not cultivated merely by talking about it. It is cultivated by actual creative experiences in mathematics. To accomplish these results, teachers need extensive help in developing appropriate teaching techniques, and they need textbook materials which are of real assistance to them. Here are two examples which illustrate the kind of teaching advocated by the UICSM:

(a) *Discovery*.—In the treatment of positive and negative numbers in "First Course," students are not given a statement of the rules for operating with such numbers. Instead, students are given several reasonable interpretations of the symbols for positive and negative numbers. They develop rules for operating with such numbers, and also develop ways of carrying out the rules quickly and effectively. If, at an early stage in the student's learning, he is asked to state the rules he has discovered, his statements will be ill-conceived and will contain many

technical errors. Since such errors are difficult to correct at this early stage and since we do not want students to dwell on statements which are technically incorrect, we avoid verbal formulations of these rules. In a later unit, when the concept of numerical variables has been treated, the student is given formulations of the rules and asked to check them.

Now, it is not an easy task to convince teachers that students can operate successfully with positive and negative numbers in the absence of formalized rules. There is a tendency for teachers to "tie things up" in verbalizations. It is necessary to persuade teachers with whom the project works that students can operate without this "tying-up." Usually the first trial is enough to convince teachers that many of their favorite rules are unnecessary.

Frequently, beginning students will ask for verbalizations of the rules. They are astounded when their teacher tells them that it is their job to make up the rules. It is not easy to bring students (with eight years of grade-school mathematics background) to the point where they believe that they do not have to depend upon textbooks or teachers in order to operate successfully. But, it is possible, and rewarding.

(b) *Freedom.*—It is common to hear high-school students talk about the "arithmetic way of solving a problem," the "algebra way of doing it," or the "geometry way of doing it." Many current textbooks and teaching methods seem to encourage this attitude, for much of conventional mathematics is taught in an exceedingly formal manner. Often, a formalism is required of students which bears no relation to the manner in which mathematics is applied outside the classroom or to the way mathematics is studied at more advanced levels. It is no exaggeration to state that some students believe that one has not proved a theorem unless one has divided a sheet of paper into two columns and has placed statements in one column and reasons in the other! It is not surprising that many students, especially the able ones, develop an aversion to mathematics just because of such petty formalism. Teachers in the UICSM Project are urged to give students much freedom in attacking problems. For example, in the treatment of equations and inequalities in "First Course," students are shown several techniques for using equations in solving the familiar "story" problems. But nowhere are students compelled to use equations to solve such problems. In fact, teachers are frequently surprised at the ingenious, so-called "arithmetic" techniques which students discover in solving such problems. Frequently, the problems are too difficult to yield to an arithmetic-type approach; it is for these problems that the so-called "algebraic" method is appropriate. If a student brings to class an ingenious arithmetic solution for a problem, his teacher may ask him if he could also solve the problem by using an equation. If he is successful with the second method, both methods can be compared. But in no sense is his first method rejected. Students are urged to exercise their intuition in solving problems, in making estimates of answers, and even in making a wild guess and then adjusting the guess in the light of subsequent verification. This attitude of freedom has re-

markable results. There are frequent bursts of creativity in project classes which are indicative of genuine mathematical talent.

"Freedom" does not mean passive "permissiveness" on the part of the teacher. The teacher must be active. He must have a keen receptiveness to students' ideas and a clear attitude of delight in his students' intellectual adventures.

The UICSM program is now in operation in Barrington, Blue Island, Elmhurst, Gurnee, Pekin, St. Charles, and University High School, all in Illinois; in the Principia Upper School in St. Louis; and, in Massachusetts, in the Beaver Country Day School, in the Newton schools, and at the Polaroid Corporation.

The development of a new mathematics program for the high school is a full-time job requiring the services of many people. The project staff includes experienced high-school teachers and university mathematicians. The staff members write student textbooks and related materials for teachers; teach students at the University High School; and make frequent visits to participating schools, where they observe co-operating teachers in action and where they conduct demonstration classes for these teachers. (The demonstration class has been found to be a most valuable technique in communicating ideas to teachers.)

Several times during the academic year the UICSM conducts two-day conferences at Urbana. These conferences include observation of the experimental classes at the University High School and discussions among participating teachers and the UICSM staff concerning new materials. Each summer, a longer conference is held, in which teachers new to the program are given intensive preparation.

In a fundamental curriculum development of this type, adequate communication must be maintained with the teachers and students who are participating in the trial of the new curriculum. The thirty-five teachers who work with UICSM materials submit weekly reports to the project center at Urbana. These reports prove to be essential in making revisions.

At the present time two problems—preparing a new curriculum and assisting the participating teachers—demand almost all the at-

tention of the staff. In the near future the staff will be increased, and more schools will be invited to co-operate.

The project engages in several kinds of dissemination activity. Copies of the teachers' editions of some UICSM materials are available to interested professional groups (libraries, mathematicians, educators, industrialists, high-school teachers, and high-school and college curriculum study groups). These editions contain both the text used by the students in the program and additional text for the aid of the teacher. These additional materials (called "teacher commentaries") contain mathematical and pedagogical discussions.

UICSM staff members have been called upon repeatedly during the past few years to give talks and demonstrations to professional groups. In such talks it is pointed out that participation in the program is not an easy task even though results may be rewarding. The teachers who now work with the project spend many hours each week in preparing for their classes. In some schools the administration has been able to release participating teachers from some of their other school duties.

The project staff is well aware of the fact that at its present stage of development the UICSM program is a handmade affair. It would be naïve to think that such a pattern of "custom tailoring" could be magnified to cover the entire country. On the other hand, the letters that the project receives and the present climate of opinion indicate that more and more teachers and administrators want to prepare themselves, and are preparing themselves, for programs such as this one.

Teaching by Television in Hagerstown

The educational aspirations of the parents and taxpayers of Washington County, Maryland, are as simple as they are universal: the finest possible education at the lowest possible cost. The obstacles are equally familiar: an inadequate supply of talented teachers, inadequate physical plant, insufficient funds. To make up for these shortages, Washington County is trying to substitute three less common resources: mutual confidence between the school system and the community, outstanding school leadership, and, last but not least, courage.

In so doing, these Marylanders are leading the nation in one of the most remarkable educational ventures of this decade: *the broad-scale use of closed-circuit television to raise the quality of learning while simultaneously reducing the cost of education*. Indeed, as this experiment progresses, this historic county, teeming with Civil War lore, is once again a cynosure of national attention, less than a century after it was the springboard for John Brown's raid on Harpers Ferry and the bloody conflict on Antietam Plain.

The nerve center for this historical experiment in education is an unprepossessing concrete-block building in the city of Hagerstown, which two years ago provided shelter over a dirt floor for surplus farm equipment. This fall its six "studios" originated 110 live television lesson-programs every week. This compares with the giant enterprise of the Columbia Broadcasting System in New York City, which, operating on a round-the-clock basis seven days a week, pro-

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duces about 140 live shows. Or N.B.C., another major network, which turns out less than 60 shows in a normal week from its offices and studios in Radio City.

The Hagerstown programs are not on a coast-to-coast coaxial cable; their network as of September, 1957, extends but 30 miles and connects 19 elementary schools, two junior high schools, and two high schools. The audience is made up of only 12,000 children in Grades I through XII, who participate in daily lessons via some 500 TV receivers in approximately 400 classrooms.

The statistics of the Maryland experiment themselves are an impressive story. Starting in September, 1956, some 5,300 students received one lesson a day over the closed-circuit. In September, 1957, the figure became 12,000, many of whom receive two classes a day. In September, 1958, the whole system of 48 schools is to be connected, and all 18,000 children in the system will share this experience.

The electronics industry, operating through its trade association, the Radio-Electronics-Television Manufacturers Association (RETMA), has agreed to contribute the equipment for this entire project, all the way from 10 TV cameras and studio equipment to the 1,000 TV receivers required for every classroom in the county. The total cost of this equipment will perhaps run as high as \$250,000. And strung between the schools there will be the use of some 110 miles of coaxial cable provided without rental charge by the Chesapeake and Potomac Telephone Company. This cable carries six lessons simultaneously on the six-channel network. Financial support to staff and evaluate this experiment has been provided by the Ford Fund for the Advancement of Education.

Table 1 shows the classes taught, by grade, and the approximate enrolments in 1956-57 and 1957-58. An interesting development, not shown in the table, has taken place in Halfway, Maryland, where one school is offering a special-education course for retarded boys and girls. Forty-five children are receiving these lessons in two classes each week.

The Hagerstown experiment is not attempting to carry on instruction without teachers in the classrooms. Still the pupil-teacher ratio in the classroom itself is being substantially changed as the classroom teachers change their responsibilities. The classroom teachers maintain almost daily contact—through feed-back sheets, meetings, or telephone—with the television teacher so that classroom problems

TABLE 1

SUBJECTS, GRADES, AND APPROXIMATE NUMBERS OF PUPILS TAUGHT BY TELEVISION IN HAGERSTOWN IN 1956-57 AND 1957-58

Subject	Grade	Number of Pupils	Subject	Grade	Number of Pupils
<i>1956-57</i>			<i>1957-58 (continued)</i>		
Art.....	I-VI	3,300	Music.....	I-III	3,060
Reading and number experiences.	I-III	1,500	Art.....	I-IV	4,130
Social studies....	IV	625	Social studies....	IV	1,070
Music.....	IV-VI	1,800	Arithmetic.....	IV	1,070
Arithmetic.....	V	600	Music.....	IV-VI	3,205
Science.....	VI	600	Arithmetic.....	V	1,125
General science....	IX	750	Social studies....	V	1,125
Plane geometry....	X	275	Art.....	V-VI	2,135
U.S. history.....	XI	525	Science.....	VI	1,010
English.....	XII	475	Arithmetic.....	VI	1,010
<i>1957-58</i>			Core.....	VII	840
Reading and number experiences.	I	1,025	Core.....	VIII	835
Reading and number experiences.	II	1,010	Mathematics....	VII-VIII	1,675
Reading and number experiences.	III	1,025	Science.....	VII-VIII	1,675
			General science....	IX	750
			Plane geometry....	X	300
			U.S. history.....	XI	675
			English.....	XII	495

arising from a TV presentation can be taken care of the next day when necessary. No attempt has yet been made to instal a "two-way audio" system so that students in the viewing classrooms may ask questions of the TV instructor during the lesson.

The evaluation of this experiment will not be completed for another four years. Nevertheless, some preliminary conclusions are apparent to even a casual observer at a school or studio in Washington County.

With striking unanimity the teachers (television or classroom variety), students, and administrators speak with enthusiasm about

the *quality of education and the quality of learning* that the television lesson makes possible. Subjectively at least, there are few doubts that television is making an important qualitative contribution. The few scattered results already available from standardized tests indicate that television classes are outperforming conventional classes, but everyone is reluctant to talk about these as yet.

Perhaps the most eloquent testimony about quality comes from the parents. Unsolicited testimonials about motivation and achievement in science, in music, in art, in mathematics, in English, and in children's general attitude toward school are the rule rather than the exception. One interesting footnote is that the attrition among the sixteen-year-olds who normally quit school at the minimum legal age fell sharply last year in the television schools.

The explanation for this apparent improvement in both the quality of instruction and the quality of learning is by no means so generally agreed upon. Some critics of TV instruction ascribe the favorable results to the existence of "experimental conditions" which tend to stimulate superior performance. Others who view the introduction of television into the classroom with neither equanimity nor anticipation are inclined to minimize such evidence as may be available. They contend that TV instruction will neutralize one highly important feature of conventional teaching: the personal contact between teacher and student. These people point out, quite correctly, that no school television experiment has yet been able to place emphasis on the so-called intangibles of the classroom experience.

Undoubtedly a majority of observers in Hagerstown would agree that improvement has occurred. Among the reasons most commonly offered for this improvement are the following:

- a) Because each television teacher is responsible for only a single lesson a day, he not only can, but is expected to, spend as much as six or eight hours preparing for each half-hour presentation to the student. This is the reverse of the conventional teaching situation.
- b) Teachers with particular skills have assignments which exploit their greatest talents. A teacher whose chief interest is research now

may work almost wholly in bringing together new material for use in the TV lessons. Or a teacher whose particular specialty is visual aids and model-making may now concentrate on the preparation of charts and models. Or a teacher who is most talented in presenting material is no longer concerned with the chore of marking papers but concentrates on the half-hour TV presentation. Or—and this is a primary consideration in Hagerstown—a classroom teacher whose major interest is in being with, and working with, children is now freed for additional counseling and working with individual pupils. The skilful collaboration of a team of teachers, each specializing in the particular aspect of teaching which interests him or her the most, has been adjudged by some to be the chief reason for the high enthusiasm and the apparent success of the initial year's program.

c) Resource persons in the community who could not, and would not, take the time and energy to meet with each group of twenty-five or thirty elementary- or high-school pupils are flattered and eager to meet several hundred (in a few years it will be several thousand) over the closed-circuit system. Thus the director of the local art museum, the president of a local bank, persons fluent in foreign languages, and a host of others with specialized abilities or experience have been effectively utilized for the first time as part-time instructors in specialized areas of the curriculum.

d) Television, by its very nature, commands the attention and active interest of pupils more effectively than does even the most able teacher. By the use of films, visuals, and close-ups, and with a skilled teacher looking head-on into the camera, each child is, in effect, given a front-row seat at a tightly packed and high-level presentation, in which the teacher either is looking directly at every individual in the class or is directing every pupil's attention on a particular and carefully selected setting.

A significant side light is the "conversion" of skeptical visitors who come to Hagerstown. Superintendents, principals, teachers, school-board members (and there have been more than two thousand visitors from outside the county during the past eight months) un-

derstandably arrive with substantial reservations and with some concern for seeing quantitative evaluative results. For the majority, a day or two of observation seems to answer most doubts. As one skeptical school man remarked, after seeing thirty first-graders fashioning recognizable elephants out of clay along with their TV instructor, "I don't need any test scores. I could see those kids learning." And there was the New York State school superintendent who "knew" teaching by television was no good but who insisted on staying over in Hagerstown one day extra because he wouldn't miss the second half of a two-part TV presentation on the history of Washington County.

Of course many visitors remain unconvinced and want to await results achieved on standardized tests by "control" and "experimental" groups. If the experience of every other TV experiment holds, the results at Hagerstown will show that, in each instance where achievement in television classes is measured against the achievement of control groups taught by conventional methods, there is equivalent or better performance in the TV classes. Another year should produce substantial data in this area.

The question still remains: Is this all practical in terms of people, buildings, and money?

Washington County has undertaken this program without recruiting any special "TV-trained" teachers. Whether other systems can do the same probably depends more on the superintendent and his staff than on the teachers. Certainly it is reasonable to assume that the necessary talent is available in any system with a fair share of able classroom teachers.

More important, unquestionably, is the potential of the Hagerstown experiment for meeting the shortage of able teachers, or teaching talent, or both. Superintendent William Brish and his staff will not make any forecasts yet on the potential long-range savings in classroom teachers. Other TV teaching programs have produced estimates of reduced teacher requirements ranging all the way from

zero to 15 or 20 per cent of the total teaching staff. One outside estimate of potential savings in number of classroom teachers in the Washington County system, which normally employs some 700 teachers, runs as high as 100-125 teachers. And these savings would come in areas where highly qualified teachers are just not available to many school systems—in music, in art, in mathematics, in science. One visiting school superintendent summed up the outlook thus: "Why should we try to hire more and more difficult-to-find teachers in fields where we can make a topnotch teacher available to all our children? It just doesn't make sense." During the first year there was no significant relief for the teacher-shortage problem in Washington County. The plans for the 1957-58 year seem to promise a significant decrease in total teacher requirements.

It is still too early to conjure up images of the "school of tomorrow" where an important part of the total instruction will be carried on by television. In Washington County this program has been started in buildings designed for conventional teaching. The Boonsboro (Maryland) high school, to be completed in 1960, will probably be the first school building in the nation that has been planned from the ground up as a television school. What it will look like, and whether it will cost more or less than a conventional building, nobody knows. Some enthusiasts are already predicting substantial savings on the theory that space can be far more efficiently utilized in a high-school building with all-purpose TV classrooms. If this proves to be the case, it is not impossible that the savings in one high school would be enough to cover the capital cost of the electronic equipment for a closed-circuit system.

Which brings up finally the toughest question of all: What are the over-all financial logistics of the Washington County project? Or, as the visiting school superintendents and school-board members ask, "How could anybody else even hope to do this without help from RETMA, the telephone company, and the Ford Fund?" The importance of such a question is clear when one considers that the aggregate contribution from these three agencies plus additional ex-

penses to the local board of education could run as high as a million dollars before the five-year experiment is complete.

The answer to this question depends, more than anything else, on the ability of Superintendent Brish and the school principals to provide a superior educational experience for the 18,000 children of Washington County with fewer teachers than would be required in a conventional teaching situation. If, for example, the net drop in professional positions is 50, then the personnel budget could reflect a surplus of as much as \$250,000. Presumably the reallocation of part of this sum would be more than enough to pay for the operation and amortization of the television equipment.

Still, there are too many unknowns for any firm conclusions. The parents and taxpayers in Washington County have exhibited real courage. The educators of Washington County have demonstrated unusual leadership. What is required of the rest of us is simply patience and open-mindedness.

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Improvement of Reading through Ability-Level Assignments

Remedial programs for students with reading difficulties at the junior high school level have done a great deal toward helping such students overcome their handicaps and develop the learning tools necessary for success in school work. Much of this remedial work has been done by special teachers in separate classes organized specifically for the purpose. However, some very effective work in reading development has also been done by teachers in regular classrooms, resulting in improvement not only for the slow learner but for all students as well.

This article reports an experimental program in reading development conducted during the 1955-56 school year at Sidney Lanier Junior High School in Houston, Texas. The results of the program, as determined by a comparison of scores on the Iowa Silent Reading Test, appear to be significant and are indicative of what can be accomplished in the improvement of reading ability within a heterogeneous grouping of students.

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For some time the staff of this school had been concerned because so many of the students appeared to be unable to read textbook material with adequate comprehension. Clearly some kind of graded reading material was needed if students were to learn effectively. A program of reading improvement was proposed which would utilize such material in developing individual reading ability.

Special efforts were made to provide the school library with reading materials of all levels of difficulty so that students might be able to find supplementary materials in each subject area written in a style and language that they could read with understanding. It was felt that, if these materials were identified in some way according to their level of reading difficulty, more effective guidance could be given students in their selection. In the spring of 1955, therefore, a group of teachers in the school arranged with the principal and the librarian to carry out an experimental program in reading development. Some of the teachers, working with the librarian during the summer, graded library materials according to level of difficulty and constructed multiple-level reading lists for three subjects: English, social studies, and science. Each item on the list was identified by code to indicate whether the content was difficult, average, or easy to read. This coding arrangement was made known only to the teachers and the librarian.

The plan of procedure for utilizing the reading lists was viewed as both remedial and developmental, the purpose being to improve the reading ability of all students. According to the plan, three experimental groups would be used. The normal heterogeneous nature of the classes was preserved, but reading assignments were to be made at three levels of ability on the basis of scores from a standardized reading test administered at the beginning of the school year.

Although the program itself would involve mainly such qualities as are fundamental to good teaching in any situation, certain basic requirements for effective utilization of instructional materials were

to be given particular emphasis in the project. A few of these might be identified as follows:

Development of an adequate school-library collection of reading materials suitable to all areas of interest and all levels of ability. Careful selection must be made of the material provided for the school library if the needs of all students are to be met. Library selections should include a large variety of supplementary materials related to all the major learning areas, written at varying levels of reading difficulty and having a wide range of interest appeal.

Grading and classification of library resources to provide students with effective guidance in their selection of reading material. Since most students need assistance in selecting reading material suitable to their own levels of growth and development, a well-defined method of identifying library resources according to this criterion should prove of infinite value to students and teachers alike.

Optimum use by the teacher of all available test data concerning students. Most schools provide for the administration of standardized tests of some kind or participate in a system-wide program of ability and achievement testing in order to gather information concerning the students' needs and abilities and to keep a record of their achievement. These test results, however, have value only as they are purposefully used by the classroom teacher in assessing the needs of each student.

Use of additional standardized tests and other types of supplementary evaluation devices to provide the teacher with needed information. Even though the school may operate a regular testing program to provide general information about student ability and achievement, there are times when information of a specific nature is needed in order to analyze needs and measure progress in a particular learning situation. Subject-area tests especially designed to diagnose learning difficulties can be particularly helpful to teachers.

Effective use of all available supplementary materials in making student assignments on the basis of ability level and interest appeal. Supplementary materials have little value except as they are used in specific ways to provide motivation, breadth of understanding, and varied applications of new learnings. To be used most effectively, they must be tailored to fit the needs of individual students and presented in such a way that their purpose and value can be clearly seen.

Three beginning eighth-grade sections were selected as experimental groups. They included students of various levels of reading ability, none of whom was selected especially for the groups. At the beginning of the fall semester, in September, 1955, the Iowa Silent Reading Test, Form AM, was administered to determine the reading level of each student. The classes then received instruction for two

semesters, each student utilizing books, pamphlets, and other reading materials assigned according to his reading ability and selected on the basis of their appeal to his own specific interests. Students who scored below a grade level of 6.4 on the test were also given special instruction in a remedial-reading class.

The full reading program was carried out in English, social studies, and science classes, with culminating activities and reporting sessions developed according to interest groups rather than ability levels. The various interest groups included students of all levels of reading ability. Discussion and reporting sessions, organized peri-

TABLE 1

DISTRIBUTION OF SCORES MADE BY THREE EIGHTH-GRADE CLASSES ON IOWA SILENT READING TEST IN SEPTEMBER, 1955, AND IN MAY, 1956

GRADE LEVEL	SECTION A		SECTION B		SECTION C		TOTAL GROUP	
	Sept. 1955	May 1956	Sept. 1955	May 1956	Sept. 1955	May 1956	Sept. 1955	May 1956
Above 10.0.....	13	20	7	16	20	28	40	64
Between 8.0 and 10.0	5	6	9	14	7	2	21	22
Below 8.0.....	11	2	13	1	7	0	31	3
Total*.....	29	28	29	31	34	30	92	89
Median score.....	9.4	10.8	8.2	10.0	10.0	12.2	9.4	11.3
Mean score.....	9.3	11.1	8.8	10.5	9.6	12.5	9.3	11.3

* Changes in class enrolments and mid-term readjustments account for the differences in section totals between September and May.

odically around certain reading topics or interests, served to develop enthusiasm for further reading on the subject. Student reports were presented in various ways: through panels, book reviews, biography reports, character sketches, quizzes, interviews, debates, and dramatizations of many kinds.

To determine their improvement in reading ability, these students were tested at the end of the school year, in May, 1956, with the Iowa Silent Reading Test, Form CM.

Table 1 shows the distribution of reading scores made by students in the three experimental sections in September, 1955, before the

developmental reading program, and in May, 1956, at the end of one school year of instruction using graded reading materials in English, social studies, and science. The number of pupils scoring at Grade 10.0 or above was increased from thirteen to twenty in Section A, from seven to sixteen in Section B, from twenty to twenty-eight in Section C, and from forty to sixty-four in all three sections. Of the thirty-one students who tested below Grade 8.0 in September, only three remained in this category in the following May. However, twelve of the original thirty-one were not included in the final testing.

Of the 11 students in Section A who scored below 8.0 in September, 1955, four were retained in low-eighth grade in the following semester, two were absent during the administration of the second test, one scored at the seventh-grade level, two at the eighth-grade level, one at Grade 10.0, and one at Grade 12.0. Of the 13 students in Section B who scored below 8.0 in September, 1955, one was retained in low-eighth grade in the following semester, one moved out of the school district, seven scored at the eighth-grade level, two at the ninth-grade level, one at Grade 10.0, and one at Grade 12.0. Of the seven students in Section C who scored below 8.0 in September, 1955, one checked out of school during the year, two were retained in low-eighth grade in the following semester, one was absent during the administration of the second test, two scored at the eighth-grade level, and one scored at Grade 10.0.

A number of new students were added to these sections during the school year as others dropped out in the normal course of student transfers and retentions. Therefore some of the students who took part in the first reading test did not participate in the second testing, and there were others who took the second test along with the rest of the class but were not members of these groups at the time of the first testing. Of the total of 92 students who took part in the first testing and the 89 who participated in the second testing, 73 actually took both of the reading tests administered for this survey.

As Table 1 shows, the median reading score in Section A was raised from Grade 9.4 to 10.8 during the school year from September, 1955, to May, 1956, advancing the median for the class by 1.4 grade levels. The mean reading score in Section A showed an over-all increase of 1.8 grade levels for the section as a whole. This gain was significant at the 2 per cent level of confidence.

In the absence of a control group, it may be assumed that the normal increase in reading ability during a nine-month term under ordinary learning conditions would be 0.9 of a grade level. Since the over-all increase in this case was 1.8 grade levels, it would appear that Section A had advanced 0.9 of a grade level beyond normal expectations for the group.

In Section B the class median increased by 1.8 grade levels, and the mean score by 1.7 grades. The difference was significant at the 2 per cent level of confidence.

The greatest advances in reading ability appear to have taken place in Section C, where the class median of 10.0 at the beginning of the experimental period was well above average for a low-eighth-grade class. The median of the section advanced 2.2 grade levels during the term. The mean score showed a still greater advance, moving up 2.9 grade levels, or over two full grade levels more than might be anticipated under normal conditions. This gain was significant at the 1 per cent level of confidence.

For the group as a whole (all three sections), the median score was increased from 9.4 to 11.3; the mean score, from 9.3 to 11.3. This increase of two full grade levels in the mean for the total group was significant at the 1 per cent level.

Impressive results were obtained at all levels of reading ability. While the number of above-grade-level readers increased from seventeen to twenty-three in Section A, from fourteen to eighteen in Section B, and from twenty-six to twenty eight in Section C, test results also indicated that below-grade-level readers decreased in number from eleven to six in Section A, from thirteen to eight in Section B, and from seven to one in Section C during the period of

the experimental program. These statistics are based on the designation of a score of 8.0 as "grade level" for the group at the beginning of the experimental period and a score of 8.8 as "grade level" at the time of the second reading test in May, 1956.

Some of the students in these sections raised their reading scores by as much as five grade levels. Even some of the below-grade readers were able to achieve large degrees of improvement. Table 2 shows that, although ten of the students gave no evidence of progress

TABLE 2

RANGE OF IMPROVEMENT IN READING MADE BY INDIVIDUAL STUDENTS

Degree of Improvement Achieved	Number of Students
Achieved top score in both tests.....	2
Improved reading score by 5 grade levels.....	7
Improved reading score by 4 grade levels.....	11
Improved reading score by 3 grade levels.....	8
Improved reading score by 2 grade levels.....	23
Improved reading score by 1 grade level.....	12
Showed no appreciable improvement in reading score...	5
Scored lower on second test than on the first test.....	5
Total number of students who took both tests.....	73

and twelve showed only average progress, forty-nine students made improvement far above the average (two students made the highest possible score on both tests).

The remarkable degree of success attained in this project will undoubtedly inspire further effort and study. The results that were obtained with these experimental groups seem to provide a clear indication of what can be accomplished within a regular classroom when instructional materials and learning assignments are adapted to the needs of individual students. In making such adaptations, it should be recognized that the need for differentiated assignments may be as great within special classes for rapid or slow learners as within regular heterogeneous class sections. Even though the range of ability may not be so great in some classes as in others, real differences exist in all classrooms, not only in ability, but in interest level, attitude, and drive to learn as well.

The Library The Pulse of the School

The philosophy of the school is the philosophy of the school library. School-library practices must be in accord with the nature and characteristics of the school population, community, curriculum, administrative and teaching personnel. Some techniques and ideas can be effective only in a particular school, but many probably can be used effectively in any school. The writer will describe the program of the high-school library of the Laboratory School at the University of Chicago. This library is a study center, a materials and service agency, a co-ordinating agency for the curriculum, and a curricular and social-guidance center. Library materials include trade books, textbooks, paperback books, periodicals, pamphlets, and college catalogues. Audio-visual materials are serviced and financed jointly with the Department of Education and are made available through a Laboratory School audio-visual aids co-ordinator.

Since the library is the study center of the school, all students in the high school, Pre-Freshman through Senior years (twelve to seventeen years of age), are scheduled to the library for one class period or more each day. The Pre-Freshman year combines the commonly known seventh- and eighth-grade programs in one year. Five hundred students are enrolled in the school, and ninety, the full accommodation of the room, are scheduled to the library per class period. Thus all students are exposed to the library for a period of

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five years. Two professionally trained librarians work with each scheduled group, each librarian being responsible for helping approximately 40-50 students per period. The library staff consists of three professionally trained persons and twelve paid student assistants. Each student assistant works approximately ten hours a week, before, during, and after school hours. The librarian is the only member of the high-school faculty who is able to observe at first hand the physical, emotional, social, and academic development of students during their entire high-school life.

There are several aids other than the daily contact with the students which help the librarian in knowing her clientele. At the beginning of the school year, every teacher receives from the Records Office a confidential report, giving personal data for each new and returning student. These data include the number of years the student has attended the school, his birth date, intelligence quotient, and scores on tests administered at the end of the preceding school year or scores on placement tests. A folder of pertinent information concerning each student is on file in the Records Office, and this file can be consulted by any teacher. The entire school faculty is divided into "Little Faculty" groups on the basis of grade levels. Close contact with home-room advisers through Little Faculty bi-weekly meetings helps the librarian learn about each student. The librarian has an opportunity to know her patrons well and can provide better guidance and motivation because of this fund of information.

Since many of the students could be considered gifted, it is important that they be exposed regularly to the facilities of a library and learn that using the resources of a library is an important part of study. Studying involves many things besides the use of one or more textbooks. The type of teaching done at the Laboratory School requires students to make extensive use of reference materials, whether they be books, paperback books, periodicals, or pamphlets. Everything in the library, including the librarian, is a reference tool.

The library collection gives body and substance to the curriculum

and thus stimulates interest and enthusiasm. Countless times, students come into the library eager to explore a subject area or to get a particular book mentioned in class by a teacher familiar with the library resources. The resources cover varied subject areas, including physical education, mathematics, social studies, English, art, music, science, home economics, shop, and others.

The library is available for use on the first day of the school year in the autumn through to the last day of the school year in spring. The library is open from 8:00 A.M. until 4:30 P.M.—one-half hour before classes start in the morning, during lunch periods, and for two hours after classes are dismissed in the afternoon. It is the one place in the school available to students regardless of faculty commitments; the student assistants keep the library open when these commitments involve the librarians.

Although present facilities do not allow for entire classes to come to the library during a school day, small groups or individuals from classes are always welcome. Since the library is used for scheduled study, some routines must be followed. Every student is assigned a seat, and the necessary student accounting is taken care of at the beginning and during the class period. At the beginning of the school year, each student receives a copy of the library regulations. An atmosphere of quiet is desired in the library—an atmosphere conducive to reading, research, and individual study. The co-operation of each library-user is necessary if this objective is to be maintained. Conference-room facilities are available for students who need to work together. All library materials circulate, including encyclopedias and specialized reference books, and students check out their own materials. This procedure has resulted in a minimum loss of library materials. Library instruction is given by the teachers in Freshman English and by all other teachers when need arises for the use of specific reference tools. The librarians complement or implement this instruction with individual help in the library.

Availability and accessibility of materials and services are the keys to effective use of the library's resources by students and

teachers. Young adults want to use a library independently. When students are intellectually capable, materials must be organized to meet their demands.

The card catalogue must be an accurate, up-to-date index to the book collection. To make possible the maximum use of all books, the catalogue must include complete subject cross-indexing. Analyses of the contents of books of short stories, essays, drama, collective biographies, and other non-fiction and fiction books are necessary. Students can locate all types of materials written by or about an author or subject in one place in the card catalogue. Cataloguing for cataloguing's sake is useless, but, when carried out with a background of information concerning the curriculum, the clientele, and the principles of learning, the whole process is one of the most professionally and technically important tasks performed by the librarian. No new title may be added to the library collection unless catalogue cards are added to the card catalogue at the same time. If the two processes are not carried out simultaneously, independent use of the card catalogue is futile. All index tools, such as *Biography Index*, *Essay and General Literature Index*, *Granger's Index to Poetry*, must be checked against library holdings. Whatever the materials area (periodicals, pamphlets, college catalogues, books, or paperback books), it is imperative that the organization be so precise that students can spend the minimum time in finding materials and the maximum time in using them.

A collection of back issues of periodicals is important for curricular research and personal investigation. Our library's resources include a complete file of sixty magazine titles indexed in *Reader's Guide to Periodical Literature* for a period of ten years. The current subscription list includes approximately 110 titles. Magazines are realistically important in the reading program of adolescents and adults. Here again, effective organization of the magazine collection must allow quick service.

Multiple copies of many book titles are necessary to comply with demand. Whenever there is a particularly heavy demand for ma-

terials in any curricular area, teachers and librarian work co-operatively to equalize their availability. In such cases, books, pamphlets, and periodicals are usually placed on open or closed reserve in the library. These are available for use in the library during the day and may be checked out for overnight use at the close of school. Beginning at 8:00 A.M., students may sign with the librarian for overnight reserve materials to be taken out the same evening. These are held for the student one-half hour after the close of school, and, if not picked up by then, are available to other students. During the last class period of the day, one of the librarians and the student assistants fill the requests made during the day for all overnight reserve materials and periodicals and arrange them alphabetically by students' last names on tables. This procedure has completely eliminated any unfair distribution of materials and has freed all the reserve materials not signed for. Students pick up their own items, check them out, and leave the library to those who are planning to settle down for a couple of hours' work. Teachers may check out the reserve materials for use in their classes during the school day, but the materials are returned before the last period so that the overnight requests of the students can be filled.

Because of the sophistication, alertness, and critical approach that are characteristic of a gifted school population, the librarian must utilize all degrees of subtlety in any reading-promotion program. Since materials are being purchased and processed throughout the year, a display of new titles is set up practically every week. Students and teachers have an opportunity to examine the new books and, by signing the reserve card attached to the front page of each book, may obtain the title as soon as it is put into circulation. Students' reserve requests are numerous, not only for the new titles, but also for books already in circulation.

Students themselves are good promoters of books and reading. They observe carefully what their peers are reading and are stimulated to read the same titles. Although all new books are displayed in the library, periodic lists of new titles are sent to all teachers

and students. These lists present a good picture of how the library collection is growing and stimulate teachers and students to make use of the new materials and to suggest titles to improve various subject areas.

The librarian must have a thorough knowledge of the books and other materials in the collection and must read widely. Awareness of activity in all other media is important. To have seen the important movies that are showing; to have heard concert artists, opera, and symphony-orchestra performances; to have seen the ballet and the plays currently in town; to have kept abreast of television programs; and to have listened to the news on the radio and to have read two morning newspapers before entering the library each day—all these help give the librarian experiences in common with her clientele and, through them, help establish good rapport and confidence.

The ordering and processing of printed materials for the entire high school is centralized in the high-school library. These materials include the books, pamphlets, magazines, and recordings to be used professionally by the faculty or to be employed in a classroom, departmental area, or the library. All these materials are purchased through the budget of the high-school library, for to have these purchases cleared through the librarian has proved to be an economical procedure. Most materials requested by teachers are processed as library materials regardless of the number of copies. When need arises, they are sent to a classroom and, when a particular unit or aspect of the subject is finished, are returned to the library. A group of books requested by one teacher may become a valuable resource for many subject-area teachers and for countless students. The books are being used continually and are always available through the library.

The librarian is also responsible for all communications from teachers regarding textbooks to be purchased by students. The procedures involved in this activity allow the librarian to learn what is being taught throughout the school and, through teacher con-

sultations, to be of some constructive help in selection. Book requirements include the familiar textbooks, subscriptions to periodicals, pamphlets, paperback books, and trade books. The librarian arranges for the teachers' desk copies and has in the library a sample textbook collection.

The professional librarian's time is being utilized to its best advantage through use of paid student help. Capable, bright students are attracted to the work in the library, so that only a limited amount of clerical or housekeeping work must be done by the librarian. Getting the library ready for use at the beginning of the school day; dispatching of student reserves; typing and filing; the majority of the tasks involved in processing of materials; checking in and shelving books, magazines, college catalogues, and pamphlets; sending out overdue and fine-accumulation notices; closing the library at the end of the school day; taking inventory at the end of the school year—these and many other jobs are among those cared for by the students. Because this arrangement has all the aspects and characteristics of regular employment, standards are kept at a very high level. Students tell us that they benefit from the intellectual stimulation, from the satisfaction of doing something constructive, from the social opportunities afforded by becoming acquainted with the entire school population, and from the work experience which will help them get jobs later in college. Many students, because of these experiences, have considered the field of librarianship as a profession. Numerous procedures have been improved as a result of suggestions made by student assistants. Volunteer student help and students working off fines are other sources of assistance.

Many of the ideas expressed in the paragraphs preceding have been in practice in the high-school library at the Laboratory School for almost fifty years. They are not new. Some have been refined to meet the changing pace. Whether students use a school library or a public library, favorable exposure to it is important. Young people are deprived of much, educationally, if they cannot start library experiences at an early age.

The Sniper's Nest

MERIT RATINGS

Merit ratings, schemes by which superior teachers would receive higher pay for outstanding performance rather than being held to the levels of rigid salary scales based on training and length of service, have been called "the hottest issue in education today." Since this topic lies outside my major fields of interest, I have not carefully scrutinized the evidence or attempted to reach an opinion upon it. But even at relatively casual reading, the manner in which some of the discussion is carried on is so irritating that I almost despair of being able to reach a judicious conclusion if I undertook to do so. I suspect that the effect on the public has been much the same.

The first bit of behavior which arouses my ire is the weeping over the fate of the child. This approach is blatantly a rhetorical device, intended to befog the issue with the mists of sentiment. To be sure, considerations of the child are ultimately relevant in any educational discussion, since the aim of education is to help students. But as an immediate consideration in this controversy, the child is essentially irrelevant. The prior question is what effect the adoption of merit ratings would have on teachers and teaching. Of course they, in turn, affect the child and the child's education. But neither proponents nor opponents of merit rating are actually out to "deprive the child of his right to a sound education." Shedding tears, crocodile or otherwise, over the poor child is not working on the immediate problem.

A second annoying element in these discussions is the number of diatribes on the complexity of the teaching operation and hence the impossibility of assessing merit in any satisfactory way. Authors may take this line because they object, and rightly, to the only too common view of the teacher as a tax-supported baby sitter, who does nothing but keep order and correct a few spelling errors. Certainly teaching is a complicated operation, and quite possibly a large section of the public needs a much better understanding of the complexity of the job than it now has. But discussions of merit ratings seem a poor occasion to convey the proper view of the nature of a teacher's duties.

In the first place, many members of the general public who read such discussions are themselves engaged in fairly complex operations. The executive, the entrepreneur, the practitioner of a profession or of a skilled craft may be perfectly willing to admit that teaching is a complicated task, but still he will be loath to say that it is enormously more complicated than his own job. All these people are being rated by their clients,

patients, patrons, and immediate superiors, and they, in turn, are rating others whom they supervise or direct. As I have heard them state, they become suspicious of assertions that teaching in elementary and secondary school is so complicated that similar judgments are impossible.

Another unpleasant imputation is also likely to be made, as we can see from what has happened as a result of our professional jargon. When educators felt they needed a technical language to express precisely the concepts with which they worked, they invented what was soon labeled "pedagogese." It has long been the butt of many jests, and outsiders have often charged that it is merely an elaborate means of enabling educationists to state platitudes in speciously scientific terminology. We can be fairly certain that, if teachers protest too loud and long about the infinite complexity of teaching, these protestations will be construed in many quarters as merely another defensive effort, an attempt to magnify a simple and routine job into an intricate and grandiose operation.

A third reason for avoiding too much stress on complexity is that many people will see that this aspect is obviously only part of the problem. We actually are not wholly at a loss to measure how well a teacher does the particular things he does, even when these fairly specific activities are woven into that complex totality called "teaching." Difficult though the problems of evaluation may be, we have made headway against equal difficulties in education and in other areas. The rock on which many attempts to evaluate teaching have foundered is not merely our inability to measure what a teacher does but also our confusion in deciding on what he ought to do. The fifth-grade teacher who gets a lot of mathematics taught may not be very good at helping his students to develop greater maturity or to solve their problems with their families and peers. Is he doing an outstanding job of teaching, or is the man who shines at these latter tasks but is less gifted at teaching "math" the better teacher? A great many of us suspect that this sort of uncertainty produces much of the difficulty in assessing teaching. We piously hope for the teacher who does everything well, but in actual life we must usually decide which particular grouping of more narrow competencies we shall reward.

The complexities of teaching will become obvious enough if we undertake to measure effective teaching, whether this evaluation is used in making merit ratings or whether the problem is studied merely as an important problem in its own right. We probably do ourselves a disservice by belaboring the point of complexity at large and in advance.

HAROLD B. DUNKEL

Educational Writings

BOOK REVIEW

RUDOLF DREIKURS, M.D., *Psychology in the Classroom*. New York 16: Harper & Bros., 1957. Pp. xvi+238. \$3.75.

Here is a short book through which teachers and parents may browse with profit. Dreikurs begins by presenting a few basic dynamic principles of child psychology, which he then explores and illustrates with a rich selection of anecdotes of the classroom experiences of young teachers who have studied with him.

Dreikurs' emphasis on dynamic principles and on the deeper psychological understanding that they can lead to, rather than on more popular but less useful descriptive and developmental approaches to the understanding of children, makes his book an unusual contribution to the literature in the field of classroom psychology. For those who wish to apply his insightful recommendations for action with the child, however, one caveat. Dreikurs has remained faithful to the psychology of Alfred Adler to the point that he underplays dynamic aspects of child personality which are no less basic or powerful than the aspects with which he deals explicitly. Adlerian dynamic psychologists, because of their emphasis on the executive functions of the ego, have had more to say about how to act with the child in school than have those who emphasized the unconscious and the personality defenses. Nevertheless, various aspects of the child's behavior will remain enigmatic and will be mishandled unless his means of protecting himself, his personality defenses, are respected as well as challenged and unless the full interplay between his behavior and the unconscious forces within him is explicitly recognized.

Four basic goals are proposed by Dreikurs as motivating misbehavior in children: attention-getting, contest for power, seeking revenge, and display of inadequacy. Misbehavior, he explains, is the seeking of these goals either actively or passively, constructively or destructively. To help the teacher understand which goal is motivating a child at a given time, Dreikurs suggests three methods, two of which—observing the child's behavior and evaluating his response to correction—are well known. More characteristic of the dynamic approach is the third: understanding the child through the teacher's spontaneous emotional reactions to him. Many teachers will wish that Dreikurs had given a fuller treatment of the third method, which is seldom adequately discussed but is potentially a powerful, as well as a misleading, tool of understanding.

The point of understanding the child is to influence his behavior. The remainder of the book discusses ways to influence behavior and uses copious anecdotes from actual classroom situations to illustrate the opportunities and the problems involved. It is refreshing to read Dreikurs' admonition to the teacher to talk as little as possible when trying to influence the misbehaving child. A lecture from the teacher or any other adult is least effective and most damaging when the child is in the midst of trouble. In answer to the popular rationalization that large classes prevent psychological understanding as well as constructive interpersonal relations, the author points out that it is not the number, but the quality and the timing, of teacher-child contacts which makes the difference.

Dreikurs recommends a fuller and a less timid use by teachers of psychological disclosures. This advice runs counter to the popular cautionary opinion that the teacher must, at all costs, avoid action that could be called therapeutic. But, as Dreikurs points out, the dangers said to be inherent in interpreting the child's behavior to him reside in the use of such interpretations to accuse or abuse the child. Even incorrect psychological disclosures, when offered conjecturally or in the form of a question at the right time and with a sincere desire to help the child, cannot do damage. When correct, they can make the difference between success and failure for child and teacher.

While profiting from these helpful insights, however, the reader must beware. The Adlerian approach to influencing behavior is a counterpoint of expedience between encouragement and challenge. Dreikurs' emphasis is on challenge. The responsive reader will find himself over-identifying with Dreikurs' pleasure in foiling the child's misbehavior and will tend to forget the ultimate purpose of such maneuvers—the well-being of the child. The rational goal stated by Dreikurs is, of course, the child's well-being, but his emotional goal in dealing with the child becomes that of exterminating the misbehavior rather than that of helping the child to be the kind of person he wants to be, even though this may mean being quite different from his teacher.

This shortcoming extends to the status of the four goals of misbehavior. On the one hand, the goals are offered as the basic forces explaining the misbehaving child's style of life. On the other hand, every effort is recommended to squelch them. But, if they are basic in the unhappy child's life, then the life-and-death issue is not how to squelch them but how to help the child deal with the basic forces in a more socially successful

and a more personally satisfying manner. It is in clarifying this goal of the teacher-child relation that the book is most wanting.

Two of Dreikurs' recommendations illustrate the kinds of problems which the book does not treat successfully. The teacher who is trying to understand the purpose of the child's behavior is correctly encouraged to examine what the child makes him feel like doing. In dealing with misbehavior, however, the teacher is advised to do exactly the opposite from what the child makes him feel like doing. This advice should be further explained. The impact of the child's misbehavior on the teacher reflects emotional forces within the child of which the child is usually far more the victim than is the teacher. The teacher's ability to understand, but to react independently of, these forces can show the child that those emotions which dominate his life and with which he may have dominated the lives of others are, for once, not indomitable. Such an experience can begin to give a child courage to try to become the master, rather than the victim, of his needs. If, however, the teacher's response is the opposite of what he feels like doing, he is also being dominated by the emotional forces within the child. A more constructive recommendation would be to use the understanding of the purpose of the behavior that this outlook gives the teacher in making a decision on how to help the child get what he needs in a way more successful for himself.

Dreikurs also recommends encouragement to succeed as the medicine par excellence for the child displaying inadequacy. While the experience of acting inadequate is usually discouraging, a display of inadequacy is not, as he implies, invariably the direct result of discouragement. There is considerable literature on this particular kind of classroom behavior, to which Dreikurs might well have referred. For example, a child may display inadequacy because he fears success. He may see success as the loss of childish pleasures which he still desperately needs. He may feel that success will make him responsible for, if not potentially capable of carrying out, wishes which are socially condemned and hence dangerous to him. He may see success in learning as the discovery of secrets which will get him into terrible trouble. In such cases the encouragement which Dreikurs recommends, if it is to be more than superficial, will only further frighten the child and widen the gap of misunderstanding between child and teacher. To help the child, the teacher must try to understand what the child fears and find a way to help him with that.

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